GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178

www.gel.com

February 15, 2015

Mr. Scot Fitzgerald
CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352

Re: CHPRC SAF X15-007
Work Order: 365553
SDG: GEL365553

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on January 22, 2015. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4505.

Sincerely,

Heather Shaffer

Heather Shaffer
Project Manager

Purchase Order: 300071ES20 - 7H
Chain of Custody: X15-007-014, X15-007-015, X15-007-016, X15-007-017, X15-007-018, X15-007-019, X15-007-020, X15-007-021, X15-007-022, X15-007-023, X15-007-024, X15-007-025, X15-007-032, X15-007-033, X15-007-034 and X15-007-035
Enclosures

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Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF X15-007
SDG: GEL365553

February 15, 2015

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt

The sample(s) arrived at GEL Laboratories, LLC, Charleston, South Carolina on January 22, 2015, for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Items of Note All efforts were made by the lab to meet any short hold times. Samples that were analyzed outside of the initial hold time but still within 2X hold time will be noted in the lab case narrative and DER

Sample Identification
The laboratory received the following samples:

Laboratory Identification	Sample Description
365553001	B2Y641
365553002	B2Y644
365553003	B2Y647
365553004	B2Y650
365553005	B2Y653
365553006	B2Y656
365553007	B2Y668
365553008	B2Y671
365553009	B2Y640
365553010	B2Y643
365553011	B2Y646
365553012	B2Y649
365553013	B2Y652
365553014	B2Y655
365553015	B2Y667
365553016	B2Y670

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: Diesel Range Organics, GC Volatiles (GRO), GC/MS Semivolatile, GC/MS Volatile, General Chemistry and Metals.

This package, to the best of my knowledge, is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manger (or designee) and the laboratory's client services representative as verified by their signatures on this report.

Heather Shaffer
Project Manager

Chain of Custody and Supporting Documentation

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

365553

C.O.C. # X15-007-015

Page 1 of 1

Collector	CHRIS FULTON CHPRC	Contact/Requester	WATERS-HUSTED, K	Telephone No.	376-4650
SAF No.	X15-007	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	100-N GW Sample Collection Supporting	Logbook No.	HNF-N-506 70 / 18	Ice Chest No.	GWS-424
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7726 6178 6468
Protocol	CERCLA	Priority:	30 Days PRIORITY	Offsite Property No.	5345

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y641	N	W	1/21/~~14~~ 15 PSU 1/22/15	0903	1x~~250~~ 60 mL G/P KS 1/19/15	9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: GW 02	28 Days/48 Hours	Cool <=6C

HS 1/22/15 HS 1/22/15

Relinquished By	Date/Time	Received By	Date/Time
CHRIS FULTON CHPRC [signature]	JAN 2 1 ~~2014~~ 15 1105	L.D. Wall CHPRC [signature]	JAN 2 1 ~~2014~~ 15 1105
L.D. Wall CHPRC [signature]	JAN 2 1 2015 1400	FEDEX	
Fed Ex		N Kinslow [signature]	1-22-15 0850

Matrix *

S = Soil	DS = Drum Solids	SE = Sediment	DL = Drum Liquids
SO = Solid	T = Tissue	SL = Sludge	WI = Wipe
W = Water	L = Liquid	O = Oil	V = Vegetation
A = Air	X = Other		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

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A-6004-842 (REV 2)

February 20, 2015

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 3055553	C.O.C. # X15-007-017 Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 70/18	**Ice Chest No.**	GWS-424
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772661786468
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5345

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y644	N	W	1/21/15 15	0940	1x~~250~~-mL G/P 60 KS 1/20/15	9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: GW 02	28 Days/48 Hours	Cool <=6C

RSL 1/22/15

HS 1/22/15

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			JAN 21 2015 1105	L.D. Wall CHPRC		L.D. Wall	JAN 21 2015 1105
L.D. Wall CHPRC		L.D. Wall	JAN 21 2015 1400				
		Fed Ex		FEDEX			
				M. Kinslow		Mk Kinslow	1-22-15 0850

HS 1/22/15

Matrix *			
S = Soil	DS = Drum Solids		
SE = Sediment	DL = Drum Liquids		
SO = Solid	T = Tissue		
SL = Sludge	WI = Wipe		
W = Water	L = Liquid		
O = Oil	V = Vegetation		
A = Air	X = Other		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

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A-6004-842 (REV 2)

18153

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 3655553	C.O.C. # X15-007-019 Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 70 / 18	**Ice Chest No.**	6005-424
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7726 6175 6468
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5345

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y647	N	W	1/21/15	1040	1x~~250~~60 mL G/P KS 1/22/15	9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: GW 02	28 Days/48 Hours	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			JAN 21 2015 1105	L.D. Wall CHPRC		L.D. Wall	JAN 21 2015 1105
L.D. Wall CHPRC		L.D. Wall	JAN 21 2015 1400	FEDEX			
FED EX				M. Knutson			1-22-15 0850

HS 1/22/15 HS 1/22/15

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

3655553

C.O.C. # **X15-007-021**

Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 70 / 18 & 19	**Ice Chest No.**	6605-412
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772663945742
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5356

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y650	N	W	1/21/15	1131	1x~~250~~-mL G/P 60 KS 1/20/15	9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: GW 02	28 Days/48 Hours	Cool <=6C

HS 1/22/15 HS 1/22/15

	Print	Sign	Date/Time		Print	Sign	Date/Time
Relinquished By	CHRIS FULTON CHPRC		JAN 21 2015 1145	Received By	L.D. Wall CHPRC	L.D. Wall	JAN 21 2015 1145
Relinquished By	L.D. Wall CHPRC	L.D. Wall	JAN 21 2015 1400	Received By	FEDEX		Date/Time
Relinquished By	FED EX		Date/Time	Received By	M. Kinslow	M. Kinslow	1-22-15 0850
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S	= Soil	DS	=	Drum Solids	
SE	= Sediment	DL	=	Drum Liquids	
SO	= Solid	T	=	Tissue	
SL	= Sludge	WI	=	Wipe	
W	= Water	L	=	Liquid	
O	= Oil	V	=	Vegetation	
A	= Air	X	=	Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

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47165

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

3655553

C.O.C. # **X15-007-023**

Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 74133	**Ice Chest No.**	GWS-428
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772658974382
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	5354

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y653	N	W	JAN 20 2015	1403	1x~~250~~-mL G/P 60 KS 1/21/15	9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: GW 02	28 Days/48 Hours	Cool <=6C

	Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
1	CHRIS FULTON CHPRC			JAN 20 2015 1507	SSU-1			JAN 20 2015 1507
2	SSU-1			JAN 21 2015 0920	M.A. White/CHPRC			JAN 21 2015 0920
3	M.A. White/CHPRC			JAN 21 2015 1400	FEDEX			Date/Time
4				Date/Time				Date/Time
	Relinquished By			Date/Time	Received By			Date/Time
	Fed Ex				M. Karslow		1-22-15	0850

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

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A-6004-842 (REV 2)

12/01/2015

February 20, 2015

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 305553	C.O.C. # X15-007-025 Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 20/19	**Ice Chest No.**	GWS - 412
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772663945742
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5356

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y656	N	W	1/21/15	1211	1x250-mL G/P	9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: GW 02	28 Days/48 Hours	Cool <=6C

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
CHRIS FULTON CHPRC		JAN 21 2015 1315 (HS 1/22/15)	L.D. Wall CHPRC	L.D. Wall	JAN 21 2015 1315 (HS 1/22/15)
L.D. Wall CHPRC	L.D. Wall	JAN 21 2015 1400	FEDEX		
	FedEx		M Kanslow	M Kanslow	1-22-15 0850

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

365553

C.O.C. # **X15-007-033**

Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 74133	**Ice Chest No.**	GWS-428
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772658974382
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	5354

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y668	N	W	JAN 20 2015	1321	1x~~250~~ 60-mL G/P KS 1/29/15	9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: GW 02	28 Days/48 Hours	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			JAN 20 2015 1507	SSU-1			JAN 20 2015 1507
SSU-1			JAN 21 2015 0920	M.A. White/CHPRC			JAN 21 2015 0920
M.A. White/CHPRC			JAN 21 2015 1400	FEDEX			
FED EX				M. Knudson			1-22-15 0850

Matrix *

S	= Soil		DS	= Drum Solids	
SE	= Sediment		DL	= Drum Liquids	
SO	= Solid		T	= Tissue	
SL	= Sludge		WI	= Wipe	
W	= Water		L	= Liquid	
O	= Oil		V	= Vegetation	
A	= Air		X	= Other	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED O 9/30/2014

A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

306553

C.O.C. # **X15-007-035**

Page 1 of 1

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	303064ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 73/68	**Ice Chest No.**	GWS-007
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772661786457
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5345

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y671	N	W	1-21-15	0819	1x250-mL G/P	9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: GW 02	28 Days/48 Hours	Cool <=6C

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
J.R. Aguilar/CHPRC		JAN 2 1 2015 1110	M.A. White/CHPRC		JAN 2 1 2015 1110
M.A. White/CHPRC		JAN 2 1 2015 1400	FEDEX		
Fed Ex			M. Kyrslav		1-22-15 0850

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED O 9/30/2014

A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

3055503

C.O.C. # **X15-007-014**

Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 70/18	**Ice Chest No.**	6605-424
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7726 6178 6468
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5345

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

BSW 1/22/15

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date 15	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y640	N	W	1/21/15	0903	1 ~~2~~x1-L G KS 1/19/15	1664A_OILGREASE: COMMON	28 Days	HCl to pH <2/Cool <=6C
B2Y640	N	W			~~3x1-L~~ aG 1x500mL KS 1/19/15	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y640	N	W			1 ~~4~~x40-mL aGs* KS 1/19/15	WTPH_GASOLINE: COMMON	14 Days	HCl to pH <2/Cool <=6C
B2Y640	N	W			~~3x1-L~~ aG 1x500mL KS 1/19/15	WTPH_MOTOR OIL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y640	N	W			1x~~500~~-mL G/P 60 KS 1/19/15	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 07 (BIOREM)	6 Months	HNO3 to pH <2
B2Y640	N	W			~~4x1-L~~ aG 1x500mL KS 1/19/15	8270_SVOA_GCMS_SIM: COMMON	7/40 Days	Cool <=6C
B2Y640	N	W			1 ~~4~~x40-mL aGs* KS 1/19/15	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C
B2Y640	N	W			1x~~250~~-mL G/P 60 KS 1/19/15	2320_ALKALINITY: COMMON	14 Days	Cool <=6C

HS 1/22/15 HS 1/22/15

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			JAN 21 2015 1105	L.D. Wall CHPRC		L.D. Wall	JAN 21 2015 1105
L.D. Wall CHPRC		L.D. Wall	JAN 21 2015 1400	FEDEX			
Fed Ex				M. Kinslow		M. Kinslow	1-22-15 0852

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in proeess) Disposed By Date/Time

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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

305553

C.O.C. # X15-007-016

Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 70 / 18	**Ice Chest No.**	6005-424
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772661786468
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5345

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

BSL 1/22/15

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y643	N	W	1/21/15 LV	0940 0704 1/20/15	1 ~~2~~ x1-L G ES 1/20/15	1664A_OILGREASE: COMMON	28 Days	HCl to pH <2/Cool <=6C
B2Y643	N	W			~~3x1-L~~ aG 1x500 mL KS 1/20/15	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y643	N	W			1 ~~4~~x40-mL aGs* KS 1/20/15	WTPH_GASOLINE: COMMON	14 Days	HCl to pH <2/Cool <=6C
B2Y643	N	W			~~3x1-L~~ aG 1x500 mL KS 1/20/15	WTPH_MOTOR OIL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y643	N	W			1x~~500~~-mL G/P 60 KS 1/20/15	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 07 (BIOREM)	6 Months	HNO3 to pH <2
B2Y643	N	W			~~4x1-L~~ aG 1x500 mL KS 1/20/15	8270_SVOA_GCMS_SIM: COMMON	7/40 Days	Cool <=6C
B2Y643	N	W			1 ~~4~~x40-mL aGs* KS 1/20/15	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C
B2Y643	N	W			1x~~250~~-mL G/P 60 KS 1/20/15	2320_ALKALINITY: COMMON	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			JAN 21 2015 1105	L.D. Wall CHPRC	L.D. Wall	L.D. Wall	JAN 21 2015 1105
L.D. Wall CHPRC	L.D. Wall	L.D. Wall	JAN 21 2015 1400		FEDEX		
	FED EX			M. Karslow			1-22-15 0850

HS 1/22/15 HS 1/22/15

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 305553	C.O.C. # X15-007-018 Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 70/18	**Ice Chest No.**	GWS-424
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772661786468
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5345

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y646	N	W	1/21/15	1040	~~1 2x1-L~~ 1 G KS 1/20/15	1664A_OILGREASE: COMMON	28 Days	HCl to pH <2/Cool <=6C
B2Y646	N	W			~~3x1-L~~ aG 1x500 mL KS 1/20/15	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y646	N	W			1 ~~4x~~40-mL aGs* KS 1/20/15	WTPH_GASOLINE: COMMON	14 Days	HCl to pH <2/Cool <=6C
B2Y646	N	W			~~3x1-L~~ aG 1x500 mL KS 1/20/15	WTPH_MOTOR OIL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y646	N	W			1x~~500~~-mL G/P 60 KS 1/20/15	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 07 (BIOREM)	6 Months	HNO3 to pH <2
B2Y646	N	W			~~4x1-L~~ aG 1x500 mL KS 1/20/15	8270_SVOA_GCMS_SIM: COMMON	7/40 Days	Cool <=6C
B2Y646	N	W			1 ~~4x~~40-mL aGs* KS 1/20/15	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C
B2Y646	N	W			1x~~250~~-mL G/P 60 KS 1/20/15	2320_ALKALINITY: COMMON	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			JAN 2 1 2015 1105	L.D. Wall CHPRC		L.D. Wall	JAN 2 1 2015 1105 HS 1/22/15
L.D. Wall CHPRC		L.D. Wall	JAN 2 1 2015 1400	FEDEX			
Fed Ex				M. Kinlow			1-22-15 0850

HS 1/22/15

Matrix *			
S = Soil	DS = Drum Solids		
SE = Sediment	DL = Drum Liquids		
SO = Solid	T = Tissue		
SL = Sludge	WI = Wipe		
W = Water	L = Liquid		
O = Oil	V = Vegetation		
A = Air	X = Other		

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 365553	C.O.C. # X15-007-020 Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 701 18 & 19	**Ice Chest No.**	GLS-412
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772663945742
Protocol	CERCLA	**Priority:**	**30 Days** PRIORITY	**Offsite Property No.**	5356

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y649	N	W	1/21/15	1131	1 ~~2~~x1-L G KS 1/20/15	1664A_OILGREASE: COMMON	28 Days	HCl to pH <2/Cool <=6C
B2Y649	N	W			~~3x1-L~~ aG 1x500mL KS1/20/15	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y649	N	W			1 ~~4~~x40-mL aGs* KS 1/20/15	WTPH_GASOLINE: COMMON	14 Days	HCl to pH <2/Cool <=6C
B2Y649	N	W			~~3x1-L~~ aG 1x500mL KS1/20/15	WTPH_MOTOR OIL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y649	N	W			1x~~500~~-mL G/P 60 KS 1/20/15	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 07 (BIOREM)	6 Months	HNO3 to pH <2
B2Y649	N	W			~~4x1-L~~ aG 1x500mL KS 1/20/15	8270_SVOA_GCMS_SIM: COMMON	7/40 Days	Cool <=6C
B2Y649	N	W			1 ~~4~~x40-mL aGs* KS 1/20/15	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C
B2Y649	N	W			1x~~250~~-mL G/P 60 KS 1/20/15	2320_ALKALINITY: COMMON	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			JAN 21 2015 1145 HD 1/22/15	L.D. Wall CHPRC	L.D. Wall	L.D. Wall	JAN 21 2015 1145 HD 1/22/15
L.D. Wall CHPRC	L.D. Wall	L.D. Wall	JAN 21 2015 1400				
	FED EX			FEDEX			
				M. Kinslow			1-22-15 0350

Matrix *			
S = Soil	DS = Drum Solids		
SE = Sediment	DL = Drum Liquids		
SO = Solid	T = Tissue		
SL = Sludge	WI = Wipe		
W = Water	L = Liquid		
O = Oil	V = Vegetation		
A = Air	X = Other		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 305553	C.O.C. # X15-007-022 Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 74133	**Ice Chest No.**	GWS-428
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772658974382
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5354

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y652	N	W	JAN 20 2015	1403	1 ~~2x~~1-L/G KS 1/19/15	1664A_OILGREASE: COMMON	28 Days	HCl to pH <2/Cool <=6C
B2Y652	N	W			~~3x1-L~~ aG 1x500mL KS 1/19/15	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y652	N	W			1 ~~4x~~40-mL aGs* KS 1/19/15	WTPH_GASOLINE: COMMON	14 Days	HCl to pH <2/Cool <=6C
B2Y652	N	W			~~3x1-L~~ aG 1x500mL KS 1/19/15	WTPH_MOTOR OIL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y652	N	W			1x~~500~~-mL G/P 60 KS 1/19/15	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 07 (BIOREM)	6 Months	HNO3 to pH <2
B2Y652	N	W			~~4x1-L~~ aG 1x500mL KS 1/19/15	8270_SVOA_GCMS_SIM: COMMON	7/40 Days	Cool <=6C
B2Y652	N	W			1 ~~4x~~40-mL aGs* KS 1/19/15	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C
B2Y652	N	W			1x~~250~~-mL G/P 60 KS 1/19/15	2320_ALKALINITY: COMMON	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			JAN 20 2015 1507	SSU-1			JAN 20 2015 1507
SSU-1			JAN 21 2015 0920	M.A. White/CHPRC			JAN 21 2015 0920
M.A. White/CHPRC			JAN 21 2015 1400	FEDEX			
FED EX				Mckinstow			1-22-15 0850

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

3055553

C.O.C. # **X15-007-024**

Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 70/19	**Ice Chest No.**	GWS-004
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772639460 39
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	5356

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y655	N	W	1/21/15	1211	2x1-L G	1664A_OILGREASE: COMMON	28 Days	HCl to pH <2/Cool <=6C
B2Y655	N	W			3x1-L aG	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y655	N	W			4x40-mL aGs*	WTPH_GASOLINE: COMMON	14 Days	HCl to pH <2/Cool <=6C
B2Y655	N	W			3x1-L aG	WTPH_MOTOR OIL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y655	N	W			1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 07 (BIOREM)	6 Months	HNO3 to pH <2
B2Y655	N	W			4x1-L aG	8270_SVOA_GCMS_SIM: COMMON	7/40 Days	Cool <=6C
B2Y655	N	W			4x40-mL aGs*	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C
B2Y655	N	W			1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C

Relinquished By	CHRIS FULTON CHPRC	Print	Sign	Date/Time JAN 21 2015 1534	Received By	L.D. Wall CHPRC Print	Sign Date/Time JAN 21 2015 1315
Relinquished By	L.D. Wall CHPRC	Print	L.D. Wall	Date/Time JAN 21 2015 1400	Received By	FEDEX	Date/Time
Relinquished By	FEDEX			Date/Time	Received By	M. Kinslow	Date/Time 1-22-15 0850
Relinquished By				Date/Time	Received By		Date/Time

HS 1/22/15

HS 1/22/15

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 305553	C.O.C. # X15-007-032 Page 1 of 1

Collector	CHRIS FULTON CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 74133	**Ice Chest No.**	GWS-428
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7726 5899 74382
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5354

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y667	N	W	JAN 2 0 2015	1321	1 ~~2x~~1-L G KS 1/19/15	1664A_OILGREASE: COMMON	28 Days	HCl to pH <2/Cool <=6C
B2Y667	N	W			~~3x1-L~~ aG 1x500-mL KS 1/19/15	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y667	N	W			1 ~~4x~~40-mL aGs* KS 1/19/15	WTPH_GASOLINE: COMMON	14 Days	HCl to pH <2/Cool <=6C
B2Y667	N	W			~~3x1-L~~ aG 1x500mL KS 1/19/15	WTPH_MOTOR OIL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y667	N	W			1x~~500~~mL G/P 60 KS 1/19/15	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 07 (BIOREM)	6 Months	HNO3 to pH <2
B2Y667	N	W			~~4x1-L~~ aG 1x500mL KS 1/19/15	8270_SVOA_GCMS_SIM: COMMON	7/40 Days	Cool <=6C
B2Y667	N	W			1 ~~4x~~40-mL aGs* KS 1/19/15	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C
B2Y667	N	W			~~1x250~~-mL G/P 1x60 KS 1/19/15	2320_ALKALINITY: COMMON	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
CHRIS FULTON CHPRC			JAN 2 0 2015 1507	SSU-1			JAN 2 0 2015 1507
SSU-1			JAN 2 1 2015 0920	M.A. White/CHPRC			JAN 2 1 2015 0920
M.A. White/CHPRC			JAN 2 1 2015 1400	FEDEX			
FED EX				M. Krasiow			1-22-15 0850

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

305553

C.O.C. # **X15-007-034**

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Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-007	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	303064ES20
Project Title	100-N GW Sample Collection Supporting	**Logbook No.**	HNF-N-506 73/168	**Ice Chest No.**	GWS-007
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772617864577
Protocol	CERCLA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5345

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

** The field NCOs prior to purging the well for sample collection, will use a transparent bailer to collect a grab sample to evaluate the presence of an oil sheen. They are to record their observations, along with any odors observed on the Field Sampling Report provided.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2Y670	N	W	1-21-15	0819	2x1-L G	1664A_OILGREASE: COMMON	28 Days	HCl to pH <2/Cool <=6C
B2Y670	N	W			3x1-L aG	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y670	N	W			4x40-mL aGs*	WTPH_GASOLINE: COMMON	14 Days	HCl to pH <2/Cool <=6C
B2Y670	N	W			3x1-L aG	WTPH_MOTOR OIL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2Y670	N	W			1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 07 (BIOREM)	6 Months	HNO3 to pH <2
B2Y670	N	W			4x1-L aG	8270_SVOA_GCMS_SIM: COMMON	7/40 Days	Cool <=6C
B2Y670	N	W			4x40-mL aGs*	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C
B2Y670	N	W	1-21-15	0819	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
J.R. Aguilar/CHPRC	JAN 2 1 2015 1110	M.A. White/CHPRC	JAN 2 1 2015 1110
M.A. White/CHPRC	JAN 2 1 2015 1400	FEDEX	
Fed Ex		M. Kirslow	1-22-15 0800

Matrix *

S	= Soil	DS	=	Drum Solids	
SE	= Sediment	DL	=	Drum Liquids	
SO	= Solid	T	=	Tissue	
SL	= Sludge	WI	=	Wipe	
W	= Water	L	=	Liquid	
O	= Oil	V	=	Vegetation	
A	= Air	X	=	Other	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time

PRINTED O 9/30/2014

A-6004-842 (REV 2)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CPRC			**SDG/AR/COC/Work Order:** 365553
Received By: MF			**Date Received:** 1-22-15
Suspected Hazard Information	**Yes**	**No**	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		✓	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: (Ice bags) Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: 130532776 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	✓			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?	✓			Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.	✓			Circle Applicable: (FedEx Air) FedEx Ground UPS Field Services Courier Other 7726 6394 5742 1.7°C 7726 6394 6039 2.2°C 7726 6178 6457 2.0°C 7726 6178 6468 1.8°C 7726 5897 4382 1.8°C

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials HS Date 1/22/15 Page 1 of 1

GL-CHL-SR-001

Data Review Qualifier Definitions

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556-8171

Report Date: 15-FEB-15

Project Specific Qualifier Definitions for GEL Client Code: CPRC

Code	Status	Qualifier Definition	CofA	Department	Fraction	Additional Comments
U	Programmed	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.	Y			Includes MDA, TPU, count uncert.
J	Programmed	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated	Y	Organics		Organics only
P	Programmed	Aroclor target analyte with greater than 25% difference between column analyses.	Y	Organics		PCB only
C	Manual	Analyte has been confirmed by GC/MS analysis	Y	Organics	Pesticide	IF GC/MS confirmation was attempted but unsuccessful do not qualify with C
B	Programmed	The analyte was detected in both the associated QC blank and in the sample.	Y	Organics		
E	Manual	Concentration exceeds the calibration range of the instrument	Y	Organics		Qualifier Uploaded
A	Manual	The TIC is a suspected aldol-condensation product	Y	Organics	Semi-Volatile	Uploaded with TIC
X	Programmed	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier	Y			Replaces H Hold Date In RAD replaces UI. Same usage as standard X as well.
N	Programmed	Spike Sample recovery is outside control limits.	Y			
*	Programmed	Duplicate analysis not within control limits	Y	Inorganics		
>	Programmed	Result greater than quantifiable range or greater than upper limit of the analysis range	Y	General Chemistry		
Z	Manual	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier	Y			
B	Programmed	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	Y	Inorganics	Metals	Replaces J Estimated Value
D	Programmed	Results are reported from a diluted aliquot of sample.	Y			Dilution
E	Programmed	Reported value is estimated due to interferences. See comment in narrative.	Y	Inorganics	Metals	GEL E
M	Manual	Duplicate precision not met.	Y	Inorganics	Metals	Replaces *
o	Programmed	Analyte failed to recover within LCS limits (0rganics only)	Y	Organics		
S	Manual	Reported value determined by the Method of Standard Additions (MSA)	Y	Inorganics		Not coded B/C Rarely preformed
T	Programmed	Spike and/or spike duplicate sample recovery is outside control limits.	Y	Organics		GC/MS only
W	Manual	Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.	Y	Inorganics		No GFAA in house.
B	Programmed	The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample	Y	Radiological		
Y	Manual	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier	Y			
+	Manual	Correlation coefficient for Method of Standard Additions (MSA) is < 0.995	Y	Inorganics		
B	Programmed	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	Y	General Chemistry		Replaces J Estimated Value
C	Programmed	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	Y	Inorganics	Metals	Replaces B Blank Detection
C	Programmed	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	Y	General Chemistry		Replaces B Blank Detection
<	Programmed	Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide	Y	General Chemistry		for Reactive CN/S

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556-8171

Report Date: 15-FEB-15

Project Specific Qualifier Definitions for GEL Client Code: CPRC

Code	Status	Qualifier Definition	CofA	Department	Fraction	Additional Comments
UX	Manual	Gamma Spectroscopy--Uncertain identification	Y	Radiological		

Laboratory Certifications

List of current GEL Certifications as of 15 February 2015

State	Certification
Alaska	UST−110
Arkansas	88−0651
CLIA	42D0904046
California	2940 Interim
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC000122013−10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−12−00283, P330−12−00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013−10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA150001
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC000122013−10
Nebraska	NE−OS−26−13
Nevada	SC000122014−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−15−10
Utah NELAP	SC000122014−16
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12

Volatile Analysis

Case Narrative

GC/MS Volatile
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL365553
Work Order #: 365553

Method/Analysis Information

Procedure:	**Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer**
Analytical Method:	SW846 8260C
Analytical Batch Number:	1452976

Sample Analysis

The following client and quality control samples were analyzed to complete this SDG using the methods referenced in the Analysis Information section:

Sample ID	Client ID
365553009	B2Y640
365553010	B2Y643
365553011	B2Y646
365553012	B2Y649
365553013	B2Y652
365553014	B2Y655
365553015	B2Y667
365553016	B2Y670
1203251575	Method Blank (MB)
1203251576	Laboratory Control Sample (LCS)
1203251578	365749002(B30188) Post Spike (PS)
1203251579	365749002(B30188) Post Spike Duplicate (PSD)
1203254660	Method Blank (MB)
1203254661	Laboratory Control Sample (LCS)

NOTE: For volatile organic analyses the matrix spike designations may be indicated as "PS" or "PSD". The "PS" designation (post spike) indicates that the matrix was fortified prior to analysis but after applying any prep factors, such as a dilution. The laboratory considers the MS/MSD and PS/PSD designations interchangeable.

The data results reported met all SOP and method criteria, unless otherwise discussed below.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-038 REV# 21.

Calibration Information

A complete list of the initial calibration data files with the correct dates and times of analysis are shown in the Calibration History report located in the Standard Data section of the data package. The surrogate compounds were calibrated using a minimum five-point calibration curve. The surrogates were added by the auto sampler at

a concentration of 50 ug/L or 20 ug/L for low level analyses. GEL Laboratories LLC will not have surrogate recoveries reported for Dibromofluoromethane. This is due to increased regulations for this analyte and an industry shortage.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Blank (MB) Statement
The blanks analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
Surrogate recoveries in all client and quality control samples were within the acceptance limits.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Sample 365749002 (B30188) was designated for spike analysis.

Matrix Spike/Matrix Spike Duplicate Recovery Statement
The spike and/or spike duplicate 1203251578 (Non SDG 365749002PS) and 1203251579 (Non SDG 365749002PSD) recoveries were not all within the acceptance limits.

Relative Percent Difference (RPD) Statement
The RPDs between the matrix spike pair met the acceptance limits.

Internal Standard (ISTD) Acceptance
The internal standard responses in all client and quality control samples met the required acceptance criteria.

Technical Information

Holding Time Specifications
All samples in this SDG met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection or sample receipt. Those holding times expressed in hours are calculated in the ALPHALIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Sample Preservation and Integrity
The pH of samples 365553009 (B2Y640), 365553010 (B2Y643), 365553011 (B2Y646), 365553012 (B2Y649), 365553013 (B2Y652) and 365553014 (B2Y655) were above 2 at the time of analysis. The samples were analyzed within 7 days from collection.

Sample Dilutions/Methanol Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-analyses were not required for samples in this SDG.

Miscellaneous Information

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
The following DER was generated for this SDG: 1377629.

Manual Integrations
Manual integrations were performed on client sample chromatograms 365553011 (B2Y646) and 365553012 (B2Y649) because the sample matrices affected the ability of the software to draw appropriate peak baselines.

TIC Comment
Tentatively identified compounds (TIC) were not required for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Residual Chlorine
Residual Chlorine was not detected in any of the samples in this SDG.

System Configuration

The Volatile-GC/MS analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description	P & T Trap
VOA2.I	Agilent 7890/5975 GC/MS w/ OI Eclipse/Archon Autosampler	HP7890N/HP5975C	DB-624	J&W, 60m x 0.25mm x 1.4um	Trap 10

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL365553 GEL Work Order: 365553

The Qualifiers in this report are defined as follows:

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

T Spike and/or spike duplicate sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Erin Haubert **Name: Erin Haubert**

Date: 18 FEB 2015 **Title: Data Validator**

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y640
Sample ID: 365553009
Matrix: WATER
Collect Date: 21-JAN-15 09:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
1,1,1-Trichloroethane 71-55-6	U	0.00	0.300	5.00	ug/L	1	CDS1 01/27/15	0838	1452976	1
1,1,2-Trichloroethane 79-00-5	U	0.00	0.300	5.00	ug/L	1				
1,1-Dichloroethane 75-34-3	U	0.00	0.300	10.0	ug/L	1				
1,1-Dichloroethylene 75-35-4	U	0.00	0.300	10.0	ug/L	1				
1,2-Dichloroethane 107-06-2	U	0.00	0.300	5.00	ug/L	1				
2-Butanone 78-93-3	TU	0.00	3.00	10.0	ug/L	1				
4-Methyl-2-pentanone 108-10-1	U	0.00	3.00	10.0	ug/L	1				
Acetone 67-64-1	TU	0.00	3.00	20.0	ug/L	1				
Benzene 71-43-2	U	0.00	0.300	5.00	ug/L	1				
Carbon disulfide 75-15-0	U	0.00	1.60	10.0	ug/L	1				
Carbon tetrachloride 56-23-5	U	0.00	0.300	5.00	ug/L	1				
Chlorobenzene 108-90-7	U	0.00	0.300	5.00	ug/L	1				
Chloroform 67-66-3	J	0.920	0.300	5.00	ug/L	1				
Ethylbenzene 100-41-4	U	0.00	0.300	5.00	ug/L	1				
Methylene chloride 75-09-2	U	0.00	1.60	5.00	ug/L	1				
Tetrachloroethylene 127-18-4	U	0.00	0.300	5.00	ug/L	1				
Toluene 108-88-3	U	0.00	0.300	5.00	ug/L	1				
Trichloroethylene 79-01-6	U	0.00	0.300	5.00	ug/L	1				

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y640 Project: CPRC0X15007
Sample ID: 365553009 Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
Vinyl chloride 75-01-4	U	0.00	0.300	10.0	ug/L	1				
Xylenes (total) 1330-20-7	U	0.00	0.300	10.0	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260C	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	8260VOA_GCMS: COMMON "As Received"	50.3 ug/L	50.0	101	(77%-123%)
Bromofluorobenzene	8260VOA_GCMS: COMMON "As Received"	52.2 ug/L	50.0	104	(80%-120%)
Toluene-d8	8260VOA_GCMS: COMMON "As Received"	46.9 ug/L	50.0	93.8	(80%-120%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y643
Sample ID: 365553010
Matrix: WATER
Collect Date: 21-JAN-15 09:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
1,1,1-Trichloroethane 71-55-6	U	0.00	0.300	5.00	ug/L	1	CDS1 01/27/15	0908	1452976	1
1,1,2-Trichloroethane 79-00-5	U	0.00	0.300	5.00	ug/L	1				
1,1-Dichloroethane 75-34-3	U	0.00	0.300	10.0	ug/L	1				
1,1-Dichloroethylene 75-35-4	U	0.00	0.300	10.0	ug/L	1				
1,2-Dichloroethane 107-06-2	U	0.00	0.300	5.00	ug/L	1				
2-Butanone 78-93-3	TU	0.00	3.00	10.0	ug/L	1				
4-Methyl-2-pentanone 108-10-1	U	0.00	3.00	10.0	ug/L	1				
Acetone 67-64-1	TU	0.00	3.00	20.0	ug/L	1				
Benzene 71-43-2	U	0.00	0.300	5.00	ug/L	1				
Carbon disulfide 75-15-0	U	0.00	1.60	10.0	ug/L	1				
Carbon tetrachloride 56-23-5	U	0.00	0.300	5.00	ug/L	1				
Chlorobenzene 108-90-7	U	0.00	0.300	5.00	ug/L	1				
Chloroform 67-66-3	U	0.00	0.300	5.00	ug/L	1				
Ethylbenzene 100-41-4	U	0.00	0.300	5.00	ug/L	1				
Methylene chloride 75-09-2	U	0.00	1.60	5.00	ug/L	1				
Tetrachloroethylene 127-18-4	U	0.00	0.300	5.00	ug/L	1				
Toluene 108-88-3	U	0.00	0.300	5.00	ug/L	1				
Trichloroethylene 79-01-6	U	0.00	0.300	5.00	ug/L	1				

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y643 Project: CPRC0X15007
Sample ID: 365553010 Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
Vinyl chloride 75-01-4	U	0.00	0.300	10.0	ug/L	1				
Xylenes (total) 1330-20-7	U	0.00	0.300	10.0	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260C	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	8260VOA_GCMS: COMMON "As Received"	50.5 ug/L	50.0	101	(77%-123%)
Bromofluorobenzene	8260VOA_GCMS: COMMON "As Received"	52.1 ug/L	50.0	104	(80%-120%)
Toluene-d8	8260VOA_GCMS: COMMON "As Received"	46.5 ug/L	50.0	92.9	(80%-120%)

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y646
Sample ID: 365553011
Matrix: WATER
Collect Date: 21-JAN-15 10:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
1,1,1-Trichloroethane 71-55-6	U	0.00	0.300	5.00	ug/L	1	CDS1 01/27/15	0938	1452976	1
1,1,2-Trichloroethane 79-00-5	U	0.00	0.300	5.00	ug/L	1				
1,1-Dichloroethane 75-34-3	U	0.00	0.300	10.0	ug/L	1				
1,1-Dichloroethylene 75-35-4	U	0.00	0.300	10.0	ug/L	1				
1,2-Dichloroethane 107-06-2	U	0.00	0.300	5.00	ug/L	1				
2-Butanone 78-93-3	TU	0.00	3.00	10.0	ug/L	1				
4-Methyl-2-pentanone 108-10-1	U	0.00	3.00	10.0	ug/L	1				
Acetone 67-64-1	TU	0.00	3.00	20.0	ug/L	1				
Benzene 71-43-2	U	0.00	0.300	5.00	ug/L	1				
Carbon disulfide 75-15-0	U	0.00	1.60	10.0	ug/L	1				
Carbon tetrachloride 56-23-5	U	0.00	0.300	5.00	ug/L	1				
Chlorobenzene 108-90-7	U	0.00	0.300	5.00	ug/L	1				
Chloroform 67-66-3	U	0.00	0.300	5.00	ug/L	1				
Ethylbenzene 100-41-4	U	0.00	0.300	5.00	ug/L	1				
Methylene chloride 75-09-2	U	0.00	1.60	5.00	ug/L	1				
Tetrachloroethylene 127-18-4	U	0.00	0.300	5.00	ug/L	1				
Toluene 108-88-3	U	0.00	0.300	5.00	ug/L	1				
Trichloroethylene 79-01-6	U	0.00	0.300	5.00	ug/L	1				

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y646 Project: CPRC0X15007
Sample ID: 365553011 Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
Vinyl chloride 75-01-4	U	0.00	0.300	10.0	ug/L	1				
Xylenes (total) 1330-20-7	U	0.00	0.300	10.0	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260C	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	8260VOA_GCMS: COMMON "As Received"	50.9 ug/L	50.0	102	(77%-123%)
Bromofluorobenzene	8260VOA_GCMS: COMMON "As Received"	51.2 ug/L	50.0	102	(80%-120%)
Toluene-d8	8260VOA_GCMS: COMMON "As Received"	46.7 ug/L	50.0	93.5	(80%-120%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y649
Sample ID: 365553012
Matrix: WATER
Collect Date: 21-JAN-15 11:31
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
1,1,1-Trichloroethane 71-55-6	U	0.00	0.300	5.00	ug/L	1	CDS1 01/27/15	1008	1452976	1
1,1,2-Trichloroethane 79-00-5	U	0.00	0.300	5.00	ug/L	1				
1,1-Dichloroethane 75-34-3	U	0.00	0.300	10.0	ug/L	1				
1,1-Dichloroethylene 75-35-4	U	0.00	0.300	10.0	ug/L	1				
1,2-Dichloroethane 107-06-2	U	0.00	0.300	5.00	ug/L	1				
2-Butanone 78-93-3	TU	0.00	3.00	10.0	ug/L	1				
4-Methyl-2-pentanone 108-10-1	U	0.00	3.00	10.0	ug/L	1				
Acetone 67-64-1	TU	0.00	3.00	20.0	ug/L	1				
Benzene 71-43-2	U	0.00	0.300	5.00	ug/L	1				
Carbon disulfide 75-15-0	U	0.00	1.60	10.0	ug/L	1				
Carbon tetrachloride 56-23-5	U	0.00	0.300	5.00	ug/L	1				
Chlorobenzene 108-90-7	U	0.00	0.300	5.00	ug/L	1				
Chloroform 67-66-3	U	0.00	0.300	5.00	ug/L	1				
Ethylbenzene 100-41-4	U	0.00	0.300	5.00	ug/L	1				
Methylene chloride 75-09-2	U	0.00	1.60	5.00	ug/L	1				
Tetrachloroethylene 127-18-4	U	0.00	0.300	5.00	ug/L	1				
Toluene 108-88-3	U	0.00	0.300	5.00	ug/L	1				
Trichloroethylene 79-01-6	U	0.00	0.300	5.00	ug/L	1				

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y649 Project: CPRC0X15007
Sample ID: 365553012 Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
Vinyl chloride 75-01-4	U	0.00	0.300	10.0	ug/L	1				
Xylenes (total) 1330-20-7	U	0.00	0.300	10.0	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260C	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	8260VOA_GCMS: COMMON "As Received"	51.2 ug/L	50.0	102	(77%-123%)
Bromofluorobenzene	8260VOA_GCMS: COMMON "As Received"	53.1 ug/L	50.0	106	(80%-120%)
Toluene-d8	8260VOA_GCMS: COMMON "As Received"	46.2 ug/L	50.0	92.4	(80%-120%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y652
Sample ID: 365553013
Matrix: WATER
Collect Date: 20-JAN-15 14:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
1,1,1-Trichloroethane 71-55-6	U	0.00	0.300	5.00	ug/L	1	CDS1 01/27/15	1038	1452976	1
1,1,2-Trichloroethane 79-00-5	U	0.00	0.300	5.00	ug/L	1				
1,1-Dichloroethane 75-34-3	U	0.00	0.300	10.0	ug/L	1				
1,1-Dichloroethylene 75-35-4	U	0.00	0.300	10.0	ug/L	1				
1,2-Dichloroethane 107-06-2	U	0.00	0.300	5.00	ug/L	1				
2-Butanone 78-93-3	TU	0.00	3.00	10.0	ug/L	1				
4-Methyl-2-pentanone 108-10-1	U	0.00	3.00	10.0	ug/L	1				
Acetone 67-64-1	TU	0.00	3.00	20.0	ug/L	1				
Benzene 71-43-2	U	0.00	0.300	5.00	ug/L	1				
Carbon disulfide 75-15-0	U	0.00	1.60	10.0	ug/L	1				
Carbon tetrachloride 56-23-5	U	0.00	0.300	5.00	ug/L	1				
Chlorobenzene 108-90-7	U	0.00	0.300	5.00	ug/L	1				
Chloroform 67-66-3	U	0.00	0.300	5.00	ug/L	1				
Ethylbenzene 100-41-4	U	0.00	0.300	5.00	ug/L	1				
Methylene chloride 75-09-2	U	0.00	1.60	5.00	ug/L	1				
Tetrachloroethylene 127-18-4	U	0.00	0.300	5.00	ug/L	1				
Toluene 108-88-3	U	0.00	0.300	5.00	ug/L	1				
Trichloroethylene 79-01-6	U	0.00	0.300	5.00	ug/L	1				

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y652
Sample ID: 365553013

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
Vinyl chloride 75-01-4	U	0.00	0.300	10.0	ug/L	1				
Xylenes (total) 1330-20-7	U	0.00	0.300	10.0	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260C	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	8260VOA_GCMS: COMMON "As Received"	49.5 ug/L	50.0	98.9	(77%-123%)
Bromofluorobenzene	8260VOA_GCMS: COMMON "As Received"	53.4 ug/L	50.0	107	(80%-120%)
Toluene-d8	8260VOA_GCMS: COMMON "As Received"	46.1 ug/L	50.0	92.2	(80%-120%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y655
Sample ID: 365553014
Matrix: WATER
Collect Date: 21-JAN-15 12:11
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
1,1,1-Trichloroethane 71-55-6	U	0.00	0.300	5.00	ug/L	1	CDS1 01/27/15	1108	1452976	1
1,1,2-Trichloroethane 79-00-5	U	0.00	0.300	5.00	ug/L	1				
1,1-Dichloroethane 75-34-3	U	0.00	0.300	10.0	ug/L	1				
1,1-Dichloroethylene 75-35-4	U	0.00	0.300	10.0	ug/L	1				
1,2-Dichloroethane 107-06-2	U	0.00	0.300	5.00	ug/L	1				
2-Butanone 78-93-3	TU	0.00	3.00	10.0	ug/L	1				
4-Methyl-2-pentanone 108-10-1	U	0.00	3.00	10.0	ug/L	1				
Acetone 67-64-1	TU	0.00	3.00	20.0	ug/L	1				
Benzene 71-43-2	U	0.00	0.300	5.00	ug/L	1				
Carbon disulfide 75-15-0	U	0.00	1.60	10.0	ug/L	1				
Carbon tetrachloride 56-23-5	U	0.00	0.300	5.00	ug/L	1				
Chlorobenzene 108-90-7	U	0.00	0.300	5.00	ug/L	1				
Chloroform 67-66-3	U	0.00	0.300	5.00	ug/L	1				
Ethylbenzene 100-41-4	U	0.00	0.300	5.00	ug/L	1				
Methylene chloride 75-09-2	U	0.00	1.60	5.00	ug/L	1				
Tetrachloroethylene 127-18-4	U	0.00	0.300	5.00	ug/L	1				
Toluene 108-88-3	U	0.00	0.300	5.00	ug/L	1				
Trichloroethylene 79-01-6	U	0.00	0.300	5.00	ug/L	1				

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y655 Project: CPRC0X15007
Sample ID: 365553014 Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
Vinyl chloride 75-01-4	U	0.00	0.300	10.0	ug/L	1				
Xylenes (total) 1330-20-7	U	0.00	0.300	10.0	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260C	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	8260VOA_GCMS: COMMON "As Received"	50.8 ug/L	50.0	102	(77%-123%)
Bromofluorobenzene	8260VOA_GCMS: COMMON "As Received"	52.0 ug/L	50.0	104	(80%-120%)
Toluene-d8	8260VOA_GCMS: COMMON "As Received"	46.6 ug/L	50.0	93.1	(80%-120%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y667
Sample ID: 365553015
Matrix: WATER
Collect Date: 20-JAN-15 13:21
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
1,1,1-Trichloroethane 71-55-6	U	0.00	0.300	5.00	ug/L	1	CDS1 01/27/15	1138	1452976	1
1,1,2-Trichloroethane 79-00-5	U	0.00	0.300	5.00	ug/L	1				
1,1-Dichloroethane 75-34-3	U	0.00	0.300	10.0	ug/L	1				
1,1-Dichloroethylene 75-35-4	U	0.00	0.300	10.0	ug/L	1				
1,2-Dichloroethane 107-06-2	U	0.00	0.300	5.00	ug/L	1				
2-Butanone 78-93-3	TU	0.00	3.00	10.0	ug/L	1				
4-Methyl-2-pentanone 108-10-1	U	0.00	3.00	10.0	ug/L	1				
Acetone 67-64-1	TU	0.00	3.00	20.0	ug/L	1				
Benzene 71-43-2	U	0.00	0.300	5.00	ug/L	1				
Carbon disulfide 75-15-0	U	0.00	1.60	10.0	ug/L	1				
Carbon tetrachloride 56-23-5	U	0.00	0.300	5.00	ug/L	1				
Chlorobenzene 108-90-7	U	0.00	0.300	5.00	ug/L	1				
Chloroform 67-66-3	U	0.00	0.300	5.00	ug/L	1				
Ethylbenzene 100-41-4	U	0.00	0.300	5.00	ug/L	1				
Methylene chloride 75-09-2	U	0.00	1.60	5.00	ug/L	1				
Tetrachloroethylene 127-18-4	U	0.00	0.300	5.00	ug/L	1				
Toluene 108-88-3	U	0.00	0.300	5.00	ug/L	1				
Trichloroethylene 79-01-6	U	0.00	0.300	5.00	ug/L	1				

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y667 Project: CPRC0X15007
Sample ID: 365553015 Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
Vinyl chloride 75-01-4	U	0.00	0.300	10.0	ug/L	1				
Xylenes (total) 1330-20-7	U	0.00	0.300	10.0	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260C	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	8260VOA_GCMS: COMMON "As Received"	51.5 ug/L	50.0	103	(77%-123%)
Bromofluorobenzene	8260VOA_GCMS: COMMON "As Received"	52.0 ug/L	50.0	104	(80%-120%)
Toluene-d8	8260VOA_GCMS: COMMON "As Received"	45.9 ug/L	50.0	91.8	(80%-120%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y670
Sample ID: 365553016
Matrix: WATER
Collect Date: 21-JAN-15 08:19
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
1,1,1-Trichloroethane 71-55-6	U	0.00	0.300	5.00	ug/L	1	CDS1 01/27/15	1208	1452976	1
1,1,2-Trichloroethane 79-00-5	U	0.00	0.300	5.00	ug/L	1				
1,1-Dichloroethane 75-34-3	U	0.00	0.300	10.0	ug/L	1				
1,1-Dichloroethylene 75-35-4	U	0.00	0.300	10.0	ug/L	1				
1,2-Dichloroethane 107-06-2	U	0.00	0.300	5.00	ug/L	1				
2-Butanone 78-93-3	TU	0.00	3.00	10.0	ug/L	1				
4-Methyl-2-pentanone 108-10-1	U	0.00	3.00	10.0	ug/L	1				
Acetone 67-64-1	TU	0.00	3.00	20.0	ug/L	1				
Benzene 71-43-2	U	0.00	0.300	5.00	ug/L	1				
Carbon disulfide 75-15-0	U	0.00	1.60	10.0	ug/L	1				
Carbon tetrachloride 56-23-5	U	0.00	0.300	5.00	ug/L	1				
Chlorobenzene 108-90-7	U	0.00	0.300	5.00	ug/L	1				
Chloroform 67-66-3	U	0.00	0.300	5.00	ug/L	1				
Ethylbenzene 100-41-4	U	0.00	0.300	5.00	ug/L	1				
Methylene chloride 75-09-2	U	0.00	1.60	5.00	ug/L	1				
Tetrachloroethylene 127-18-4	U	0.00	0.300	5.00	ug/L	1				
Toluene 108-88-3	U	0.00	0.300	5.00	ug/L	1				
Trichloroethylene 79-01-6	U	0.00	0.300	5.00	ug/L	1				

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y670 Project: CPRC0X15007
Sample ID: 365553016 Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics										
8260VOA_GCMS: COMMON "As Received"										
Vinyl chloride 75-01-4	U	0.00	0.300	10.0	ug/L	1				
Xylenes (total) 1330-20-7	U	0.00	0.300	10.0	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260C	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	8260VOA_GCMS: COMMON "As Received"	52.4 ug/L	50.0	105	(77%-123%)
Bromofluorobenzene	8260VOA_GCMS: COMMON "As Received"	52.7 ug/L	50.0	105	(80%-120%)
Toluene-d8	8260VOA_GCMS: COMMON "As Received"	46.4 ug/L	50.0	92.8	(80%-120%)

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: February 18, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: Mr. Scot Fitzgerald

Workorder: 365553

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS										
Batch 1452976										
QC1203251576 LCS										
1,1,1-Trichloroethane	50.0			58.5	ug/L		117	(70%-130%)	CDS1	01/27/15 07:04
1,1,2-Trichloroethane	50.0			50.6	ug/L		101	(70%-130%)		
1,1-Dichloroethane	50.0			55.1	ug/L		110	(70%-130%)		
1,1-Dichloroethylene	50.0			55.3	ug/L		111	(70%-130%)		
1,2-Dichloroethane	50.0			52.0	ug/L		104	(70%-130%)		
2-Butanone	250			257	ug/L		103	(70%-130%)		
4-Methyl-2-pentanone	250			250	ug/L		100	(70%-130%)		
Acetone	250			265	ug/L		106	(70%-130%)		
Benzene	50.0			54.2	ug/L		108	(70%-130%)		
Carbon disulfide	250			282	ug/L		113	(70%-130%)		
Carbon tetrachloride	50.0			58.8	ug/L		118	(70%-130%)		
Chlorobenzene	50.0			52.8	ug/L		106	(70%-130%)		
Chloroform	50.0			54.5	ug/L		109	(70%-130%)		
Ethylbenzene	50.0			55.9	ug/L		112	(70%-130%)		
Methylene chloride	50.0			48.3	ug/L		96.6	(70%-130%)		
Tetrachloroethylene	50.0			54.1	ug/L		108	(70%-130%)		
Toluene	50.0			52.8	ug/L		106	(70%-130%)		
Trichloroethylene	50.0			55.4	ug/L		111	(70%-130%)		
Vinyl chloride	50.0			46.6	ug/L		93.2	(70%-130%)		
Xylenes (total)	150			166	ug/L		111	(70%-130%)		

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QC Summary

Workorder: 365553

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS										
Batch 1452976										
**1,2-Dichloroethane-d4	50.0			50.5	ug/L		101	(77%-123%)	CDS1	01/27/15 07:04
**Bromofluorobenzene	50.0			49.3	ug/L		98.7	(80%-120%)		
**Toluene-d8	50.0			49.0	ug/L		98.1	(80%-120%)		
QC1203254661 LCS										
1,1,1-Trichloroethane	50.0			49.2	ug/L		98.5	(70%-130%)		01/28/15 09:29
1,1,2-Trichloroethane	50.0			48.1	ug/L		96.3	(70%-130%)		
1,1-Dichloroethane	50.0			44.7	ug/L		89.4	(70%-130%)		
1,1-Dichloroethylene	50.0			43.5	ug/L		86.9	(70%-130%)		
1,2-Dichloroethane	50.0			50.0	ug/L		100	(70%-130%)		
2-Butanone	250			267	ug/L		107	(70%-130%)		
4-Methyl-2-pentanone	250			249	ug/L		99.5	(70%-130%)		
Acetone	250			281	ug/L		112	(70%-130%)		
Benzene	50.0			44.0	ug/L		88	(70%-130%)		
Carbon disulfide	250			220	ug/L		87.8	(70%-130%)		
Carbon tetrachloride	50.0			48.7	ug/L		97.3	(70%-130%)		
Chlorobenzene	50.0			45.3	ug/L		90.5	(70%-130%)		
Chloroform	50.0			47.0	ug/L		94	(70%-130%)		
Ethylbenzene	50.0			46.0	ug/L		92	(70%-130%)		
Methylene chloride	50.0			41.8	ug/L		83.6	(70%-130%)		
Tetrachloroethylene	50.0			43.7	ug/L		87.5	(70%-130%)		
Toluene	50.0			42.5	ug/L		85.1	(70%-130%)		
Trichloroethylene	50.0			45.2	ug/L		90.5	(70%-130%)		

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QC Summary

Workorder: 365553

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS										
Batch 1452976										
Vinyl chloride	50.0			46.2	ug/L		92.4	(70%-130%)	CDS1	01/28/15 09:29
Xylenes (total)	150			139	ug/L		92.4	(70%-130%)		
**1,2-Dichloroethane-d4	50.0			51.2	ug/L		102	(77%-123%)		
**Bromofluorobenzene	50.0			49.7	ug/L		99.4	(80%-120%)		
**Toluene-d8	50.0			47.6	ug/L		95.1	(80%-120%)		
QC1203251575 MB										
1,1,1-Trichloroethane			U	0.300	ug/L					01/27/15 08:08
1,1,2-Trichloroethane			U	0.300	ug/L					
1,1-Dichloroethane			U	0.300	ug/L					
1,1-Dichloroethylene			U	0.300	ug/L					
1,2-Dichloroethane			U	0.300	ug/L					
2-Butanone			U	3.00	ug/L					
4-Methyl-2-pentanone			U	3.00	ug/L					
Acetone			U	3.00	ug/L					
Benzene			U	0.300	ug/L					
Carbon disulfide			U	1.60	ug/L					
Carbon tetrachloride			U	0.300	ug/L					
Chlorobenzene			U	0.300	ug/L					
Chloroform			U	0.300	ug/L					
Ethylbenzene			U	0.300	ug/L					
Methylene chloride			U	1.60	ug/L					
Tetrachloroethylene			U	0.300	ug/L					

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QC Summary

Workorder: 365553

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS										
Batch 1452976										
Toluene			U	0.300	ug/L				CDS1	01/27/15 08:08
Trichloroethylene			U	0.300	ug/L					
Vinyl chloride			U	0.300	ug/L					
Xylenes (total)			U	0.300	ug/L					
**1,2-Dichloroethane-d4	50.0			50.0	ug/L		99.9	(77%-123%)		
**Bromofluorobenzene	50.0			51.9	ug/L		104	(80%-120%)		
**Toluene-d8	50.0			47.0	ug/L		94	(80%-120%)		
QC1203254660 MB										
1,1,1-Trichloroethane			U	0.300	ug/L					01/28/15 10:28
1,1,2-Trichloroethane			U	0.300	ug/L					
1,1-Dichloroethane			U	0.300	ug/L					
1,1-Dichloroethylene			U	0.300	ug/L					
1,2-Dichloroethane			U	0.300	ug/L					
2-Butanone			U	3.00	ug/L					
4-Methyl-2-pentanone			U	3.00	ug/L					
Acetone			U	3.00	ug/L					
Benzene			U	0.300	ug/L					
Carbon disulfide			U	1.60	ug/L					
Carbon tetrachloride			U	0.300	ug/L					
Chlorobenzene			U	0.300	ug/L					
Chloroform			U	0.300	ug/L					
Ethylbenzene			U	0.300	ug/L					

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS											
Batch 1452976											
Methylene chloride				U	1.60	ug/L				CDS1	01/28/15 10:28
Tetrachloroethylene				U	0.300	ug/L					
Toluene				U	0.300	ug/L					
Trichloroethylene				U	0.300	ug/L					
Vinyl chloride				U	0.300	ug/L					
Xylenes (total)				U	0.300	ug/L					
**1,2-Dichloroethane-d4	50.0				51.0	ug/L		102	(77%-123%)		
**Bromofluorobenzene	50.0				52.9	ug/L		106	(80%-120%)		
**Toluene-d8	50.0				46.6	ug/L		93.3	(80%-120%)		
QC1203251578 365749002 PS											
1,1,1-Trichloroethane	50.0	U	0.00		59.1	ug/L		118	(70%-130%)		01/28/15 13:58
1,1,2-Trichloroethane	50.0	U	0.00		51.0	ug/L		102	(70%-130%)		
1,1-Dichloroethane	50.0	U	0.00		55.0	ug/L		110	(70%-130%)		
1,1-Dichloroethylene	50.0	U	0.00		56.8	ug/L		114	(70%-130%)		
1,2-Dichloroethane	50.0	U	0.00		53.0	ug/L		106	(70%-130%)		
2-Butanone	250	TU	0.00	T	153	ug/L		61.3*	(70%-130%)		
4-Methyl-2-pentanone	250	U	0.00		232	ug/L		92.7	(70%-130%)		
Acetone	250	TU	0.00	T	107	ug/L		42.9*	(70%-130%)		
Benzene	50.0	U	0.00		54.5	ug/L		109	(70%-130%)		
Carbon disulfide	250	U	0.00		291	ug/L		116	(70%-130%)		
Carbon tetrachloride	50.0	U	0.00		60.5	ug/L		121	(70%-130%)		
Chlorobenzene	50.0	U	0.00		54.1	ug/L		108	(70%-130%)		

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS											
Batch 1452976											
Chloroform	50.0	U	0.00		54.4	ug/L		109	(70%-130%)	CDS1	01/28/15 13:58
Ethylbenzene	50.0	U	0.00		57.4	ug/L		115	(70%-130%)		
Methylene chloride	50.0	J	4.18		51.2	ug/L		94	(70%-130%)		
Tetrachloroethylene	50.0	U	0.00		55.0	ug/L		110	(70%-130%)		
Toluene	50.0	U	0.00		52.6	ug/L		105	(70%-130%)		
Trichloroethylene	50.0	U	0.00		56.7	ug/L		113	(70%-130%)		
Vinyl chloride	50.0	U	0.00		49.7	ug/L		99.3	(70%-130%)		
Xylenes (total)	150	U	0.00		168	ug/L		112	(70%-130%)		
**1,2-Dichloroethane-d4	50.0		51.4		49.4	ug/L		98.7	(77%-123%)		
**Bromofluorobenzene	50.0		53.2		49.0	ug/L		98	(80%-120%)		
**Toluene-d8	50.0		46.5		47.7	ug/L		95.5	(80%-120%)		
QC1203251579 365749002 PSD											
1,1,1-Trichloroethane	50.0	U	0.00		59.3	ug/L	0.304	119	(0%-20%)		01/28/15 14:28
1,1,2-Trichloroethane	50.0	U	0.00		51.1	ug/L	0.274	102	(0%-20%)		
1,1-Dichloroethane	50.0	U	0.00		54.3	ug/L	1.28	109	(0%-20%)		
1,1-Dichloroethylene	50.0	U	0.00		56.1	ug/L	1.24	112	(0%-20%)		
1,2-Dichloroethane	50.0	U	0.00		53.1	ug/L	0.207	106	(0%-20%)		
2-Butanone	250	TU	0.00	T	153	ug/L	0.379	61.1*	(0%-20%)		
4-Methyl-2-pentanone	250	U	0.00		238	ug/L	2.44	95	(0%-20%)		
Acetone	250	TU	0.00	T	112	ug/L	4.23	44.8*	(0%-20%)		
Benzene	50.0	U	0.00		53.0	ug/L	2.88	106	(0%-20%)		
Carbon disulfide	250	U	0.00		278	ug/L	4.57	111	(0%-20%)		

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Volatile-GC/MS												
Batch 1452976												
Carbon tetrachloride	50.0	U	0.00		59.7	ug/L	1.30	119	(0%-20%)	CDS1	01/28/15	14:28
Chlorobenzene	50.0	U	0.00		52.9	ug/L	2.15	106	(0%-20%)			
Chloroform	50.0	U	0.00		54.4	ug/L	0.00	109	(0%-20%)			
Ethylbenzene	50.0	U	0.00		55.7	ug/L	3.04	111	(0%-20%)			
Methylene chloride	50.0	J	4.18		50.9	ug/L	0.549	93.4	(0%-20%)			
Tetrachloroethylene	50.0	U	0.00		54.1	ug/L	1.63	108	(0%-20%)			
Toluene	50.0	U	0.00		51.3	ug/L	2.64	103	(0%-20%)			
Trichloroethylene	50.0	U	0.00		55.1	ug/L	2.93	110	(0%-20%)			
Vinyl chloride	50.0	U	0.00		47.3	ug/L	4.97	94.5	(0%-20%)			
Xylenes (total)	150	U	0.00		164	ug/L	2.46	109	(0%-20%)			
**1,2-Dichloroethane-d4	50.0		51.4		50.6	ug/L		101	(77%-123%)			
**Bromofluorobenzene	50.0		53.2		50.5	ug/L		101	(80%-120%)			
**Toluene-d8	50.0		46.5		48.2	ug/L		96.4	(80%-120%)			

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
- N Spike Sample recovery is outside control limits.
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate sample recovery is outside control limits.

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QC Summary

Workorder: 365553

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1377629
Revision No.: 1

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
30-JAN-15	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
VOA GC/MS	SW846 8260C	Liquid	CPRC
Batch ID:	**Sample Numbers:**		
1452976	See Below		

Potentially affected work order(s)(SDG): **365553(GEL365553),365663(GEL365663),365668(GEL365668),365700(GEL365700),365749(GEL365749),365755(GEL365755),365758(GEL365758),365759(GEL365759)**

Application Issues:

Failed Recovery for PS/PSD

Failed Recovery for MS/MSD, or PS/PSD

Specification and Requirements Exception Description:	DER Disposition:
1. The recoveries for Acetone and 2-Butanone were outside of acceptance limits in the matrix spike and in the matrix spike duplicate performed on sample 365749002. The calculated relative percent differences between the MS and MSD were within acceptance limits for all client requested compounds.	1. Narrate and report data.

Originator's Name:
Crystal Stacey 30-JAN-15

Data Validator/Group Leader:
Erin Haubert 18-FEB-15

Semi-Volatile Analysis

Case Narrative

GC/MS Semivolatile
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL365553
Work Order #: 365553

Method/Analysis Information

Procedure:	**Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry**
Analytical Method:	SW846 3510C/8270D SIM PAH
Prep Method:	SW846 3510C
Analytical Batch Number:	1452052
Prep Batch Number:	1452051

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3510C/8270D SIM PAH:

Sample ID	Client ID
365553009	B2Y640
365553010	B2Y643
365553011	B2Y646
365553012	B2Y649
365553013	B2Y652
365553014	B2Y655
365553015	B2Y667
365553016	B2Y670
1203249273	MB for batch 1452051
1203249274	Laboratory Control Sample (LCS)
1203249275	365481003(B2Y658) Matrix Spike (MS)
1203249276	365481003(B2Y658) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-009 REV# 35.

Raw data reports are processed and reviewed by the analyst using the data analysis software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package. The various calibration mixes may not be calibrated using all of the calibration levels. In addition, not all of the mixes are calibrated using the same levels.

Diphenylamine has now superseded N-Nitroso-diphenylamine on Quantitation Reports, Initial Calibration Reports, Calibration Check Standard Reports, etc. Previous versions of EPA Methodologies referenced N-Nitroso-diphenylamine. However, as stated in EPA Methodology, "N-Nitroso-diphenylamine decomposes in the gas chromatographic inlet and cannot be separated from Diphenylamine." Studies of these two compounds at GEL, both independent of each other and together, showed that they not only co-elute, but also have similar mass spectra. N-Nitroso-diphenylamine and Diphenylamine will be reported as Diphenylamine on all reports and forms.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG) in this batch. A second source initial calibration verification (ICV) was included in the standard section directly behind the initial calibration.

CCV Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
Target analytes were detected below the PQL in the 1203249273 (MB) associated with this SDG. These analytes were not detected above the PQL in the associated samples. The data are reported and qualified accordingly.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria for this SDG in this batch.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Sample 365481003 (B2Y658) was selected for analysis as the matrix spike and matrix spike duplicate.

Spike Recovery Statement
The MS and MSD recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD values between the MS and MSD met the acceptance limits.

Internal Standard (ISTD) Acceptance
The internal standard responses used to quantitate the requested target analytes were within the required acceptance criteria for the SDG associated samples in this batch.

Technical Information:

Holding Time Specifications
All samples in this SDG in this batch met the specified holding time.

Preparation/Analytical Method Verification

The samples 365553009 (B2Y640), 365553010 (B2Y643), 365553011 (B2Y646), 365553012 (B2Y649), 365553013 (B2Y652) and 365553015 (B2Y667) were extracted using less than 1000 mL of sample elevating the MDL and PQL of Benzo(a)anthracene.

Sample Dilutions
The samples in this SDG in this batch did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch unless confirmations or dilutions were required.

Miscellaneous Information:

Data Exception (DER) Documentation
A data exception report (DER) was not generated for sample(s) in this SDG in this batch. A data exception report (DER) was not generated for this SDG.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations. Manual integrations, if any, are included with the raw data.

TIC Comment
Tentatively identified compounds (TIC) were not required for the samples in this SDG for this batch.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

Due to rounding differences in the calculation, the data reported in the Surrogate Recovery Report may differ slightly from the raw data. Due to software issue, the raw data may not correctly display the updated SPC limits. Please see Sample Data Summary Report and Surrogate Recovery Report for the correct surrogate acceptance limits.

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the reviewer name associated with the generation of the data and package. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

System Configuration

The Semi-Volatile-GC/MS analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description

MSD2.I	Agilent 7890A/5975C GC/MS w/7683 Autosampler	HP7890A/HP5975C	DB-5MS	25m x 0.2mm, 0.33um (5% Phenylmethylpolysiloxane)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL365553 GEL Work Order: 365553

The Qualifiers in this report are defined as follows:

B The analyte was detected in both the associated QC blank and in the sample.

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 17 FEB 2015 **Title: Data Validator**

Sample Data Summary

GEL LABORATORIES LLC
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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y640
Sample ID: 365553009
Matrix: WATER
Collect Date: 21-JAN-15 09:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270_SVOA_GCMS_SIM: COMMON "As Received"										
Acenaphthene 83-32-9	U	0.00	0.104	20.0	ug/L	1	JMB3 01/26/15	1532	1452052	1
Acenaphthylene 208-96-8	U	0.00	0.104	25.0	ug/L	1				
Anthracene 120-12-7	U	0.00	0.104	10.0	ug/L	1				
Benzo(a)anthracene 56-55-3	U	0.00	0.104	0.417	ug/L	1				
Benzo(a)pyrene 50-32-8	U	0.00	0.104	0.500	ug/L	1				
Benzo(b)fluoranthene 205-99-2	U	0.00	0.104	0.500	ug/L	1				
Benzo(ghi)perylene 191-24-2	U	0.00	0.104	1.00	ug/L	1				
Benzo(k)fluoranthene 207-08-9	U	0.00	0.104	0.500	ug/L	1				
Chrysene 218-01-9	U	0.00	0.104	5.00	ug/L	1				
Dibenzo(a,h)anthracene 53-70-3	U	0.00	0.104	1.00	ug/L	1				
Fluoranthene 206-44-0	U	0.00	0.104	5.00	ug/L	1				
Fluorene 86-73-7	U	0.00	0.104	3.00	ug/L	1				
Indeno(1,2,3-cd)pyrene 193-39-5	U	0.00	0.104	1.00	ug/L	1				
Naphthalene 91-20-3	U	0.00	0.104	20.0	ug/L	1				
Phenanthrene 85-01-8	J	0.125	0.104	10.0	ug/L	1				
Pyrene 129-00-0	U	0.00	0.104	20.0	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y640
Sample ID: 365553009

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
SW846 3510C	Prep Method 3510C for Liquid			RXC1	01/23/15	1020	1452051			

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D SIM PAH	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	8270_SVOA_GCMS_SIM: COMMON "As Received"	9.38 ug/L	10.4	90.0	(35%-112%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y643
Sample ID: 365553010
Matrix: WATER
Collect Date: 21-JAN-15 09:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270_SVOA_GCMS_SIM: COMMON "As Received"										
Acenaphthene 83-32-9	U	0.00	0.104	20.0	ug/L	1	JMB3 01/26/15	1602	1452052	1
Acenaphthylene 208-96-8	U	0.00	0.104	25.0	ug/L	1				
Anthracene 120-12-7	U	0.00	0.104	10.0	ug/L	1				
Benzo(a)anthracene 56-55-3	U	0.00	0.104	0.417	ug/L	1				
Benzo(a)pyrene 50-32-8	U	0.00	0.104	0.500	ug/L	1				
Benzo(b)fluoranthene 205-99-2	U	0.00	0.104	0.500	ug/L	1				
Benzo(ghi)perylene 191-24-2	U	0.00	0.104	1.00	ug/L	1				
Benzo(k)fluoranthene 207-08-9	U	0.00	0.104	0.500	ug/L	1				
Chrysene 218-01-9	U	0.00	0.104	5.00	ug/L	1				
Dibenzo(a,h)anthracene 53-70-3	U	0.00	0.104	1.00	ug/L	1				
Fluoranthene 206-44-0	U	0.00	0.104	5.00	ug/L	1				
Fluorene 86-73-7	U	0.00	0.104	3.00	ug/L	1				
Indeno(1,2,3-cd)pyrene 193-39-5	U	0.00	0.104	1.00	ug/L	1				
Naphthalene 91-20-3	U	0.00	0.104	20.0	ug/L	1				
Phenanthrene 85-01-8	U	0.00	0.104	10.0	ug/L	1				
Pyrene 129-00-0	U	0.00	0.104	20.0	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y643 Project: CPRC0X15007
Sample ID: 365553010 Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
SW846 3510C	Prep Method 3510C for Liquid			RXC1	01/23/15	1020	1452051			

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D SIM PAH	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	8270_SVOA_GCMS_SIM: COMMON "As Received"	8.96 ug/L	10.4	86.0	(35%-112%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y646
Sample ID: 365553011
Matrix: WATER
Collect Date: 21-JAN-15 10:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270_SVOA_GCMS_SIM: COMMON "As Received"											
Acenaphthene 83-32-9	J	0.574	0.106	20.0	ug/L	1	JMB3	01/26/15	1632	1452052	1
Acenaphthylene 208-96-8	U	0.00	0.106	25.0	ug/L	1					
Anthracene 120-12-7	U	0.00	0.106	10.0	ug/L	1					
Benzo(a)anthracene 56-55-3	U	0.00	0.106	0.426	ug/L	1					
Benzo(a)pyrene 50-32-8	U	0.00	0.106	0.500	ug/L	1					
Benzo(b)fluoranthene 205-99-2	U	0.00	0.106	0.500	ug/L	1					
Benzo(ghi)perylene 191-24-2	U	0.00	0.106	1.00	ug/L	1					
Benzo(k)fluoranthene 207-08-9	U	0.00	0.106	0.500	ug/L	1					
Chrysene 218-01-9	U	0.00	0.106	5.00	ug/L	1					
Dibenzo(a,h)anthracene 53-70-3	U	0.00	0.106	1.00	ug/L	1					
Fluoranthene 206-44-0	U	0.00	0.106	5.00	ug/L	1					
Fluorene 86-73-7	J	1.43	0.106	3.00	ug/L	1					
Indeno(1,2,3-cd)pyrene 193-39-5	U	0.00	0.106	1.00	ug/L	1					
Naphthalene 91-20-3	U	0.00	0.106	20.0	ug/L	1					
Phenanthrene 85-01-8	U	0.00	0.106	10.0	ug/L	1					
Pyrene 129-00-0	U	0.00	0.106	20.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch

GEL LABORATORIES LLC
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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y646
Sample ID: 365553011

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
SW846 3510C	Prep Method 3510C for Liquid			RXC1	01/23/15	1020	1452051			

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D SIM PAH	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	8270_SVOA_GCMS_SIM: COMMON "As Received"	8.70 ug/L	10.6	81.8	(35%-112%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y649
Sample ID: 365553012
Matrix: WATER
Collect Date: 21-JAN-15 11:31
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270_SVOA_GCMS_SIM: COMMON "As Received"											
Acenaphthene 83-32-9	J	0.298	0.106	20.0	ug/L	1	JMB3	01/26/15	1702	1452052	1
Acenaphthylene 208-96-8	U	0.00	0.106	25.0	ug/L	1					
Anthracene 120-12-7	U	0.00	0.106	10.0	ug/L	1					
Benzo(a)anthracene 56-55-3	U	0.00	0.106	0.426	ug/L	1					
Benzo(a)pyrene 50-32-8	U	0.00	0.106	0.500	ug/L	1					
Benzo(b)fluoranthene 205-99-2	U	0.00	0.106	0.500	ug/L	1					
Benzo(ghi)perylene 191-24-2	U	0.00	0.106	1.00	ug/L	1					
Benzo(k)fluoranthene 207-08-9	U	0.00	0.106	0.500	ug/L	1					
Chrysene 218-01-9	U	0.00	0.106	5.00	ug/L	1					
Dibenzo(a,h)anthracene 53-70-3	U	0.00	0.106	1.00	ug/L	1					
Fluoranthene 206-44-0	U	0.00	0.106	5.00	ug/L	1					
Fluorene 86-73-7	J	0.809	0.106	3.00	ug/L	1					
Indeno(1,2,3-cd)pyrene 193-39-5	U	0.00	0.106	1.00	ug/L	1					
Naphthalene 91-20-3	U	0.00	0.106	20.0	ug/L	1					
Phenanthrene 85-01-8	U	0.00	0.106	10.0	ug/L	1					
Pyrene 129-00-0	U	0.00	0.106	20.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y649
Sample ID: 365553012

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
SW846 3510C	Prep Method 3510C for Liquid			RXC1	01/23/15	1020	1452051			

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D SIM PAH	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	8270_SVOA_GCMS_SIM: COMMON "As Received"	8.13 ug/L	10.6	76.4	(35%-112%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y652
Sample ID: 365553013
Matrix: WATER
Collect Date: 20-JAN-15 14:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270_SVOA_GCMS_SIM: COMMON "As Received"										
Acenaphthene 83-32-9	U	0.00	0.104	20.0	ug/L	1	JMB3 01/26/15	1732	1452052	1
Acenaphthylene 208-96-8	U	0.00	0.104	25.0	ug/L	1				
Anthracene 120-12-7	U	0.00	0.104	10.0	ug/L	1				
Benzo(a)anthracene 56-55-3	U	0.00	0.104	0.417	ug/L	1				
Benzo(a)pyrene 50-32-8	U	0.00	0.104	0.500	ug/L	1				
Benzo(b)fluoranthene 205-99-2	U	0.00	0.104	0.500	ug/L	1				
Benzo(ghi)perylene 191-24-2	U	0.00	0.104	1.00	ug/L	1				
Benzo(k)fluoranthene 207-08-9	U	0.00	0.104	0.500	ug/L	1				
Chrysene 218-01-9	U	0.00	0.104	5.00	ug/L	1				
Dibenzo(a,h)anthracene 53-70-3	U	0.00	0.104	1.00	ug/L	1				
Fluoranthene 206-44-0	U	0.00	0.104	5.00	ug/L	1				
Fluorene 86-73-7	U	0.00	0.104	3.00	ug/L	1				
Indeno(1,2,3-cd)pyrene 193-39-5	U	0.00	0.104	1.00	ug/L	1				
Naphthalene 91-20-3	U	0.00	0.104	20.0	ug/L	1				
Phenanthrene 85-01-8	U	0.00	0.104	10.0	ug/L	1				
Pyrene 129-00-0	U	0.00	0.104	20.0	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y652
Sample ID: 365553013

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
SW846 3510C	Prep Method 3510C for Liquid			RXC1	01/23/15	1020	1452051			

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D SIM PAH	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	8270_SVOA_GCMS_SIM: COMMON "As Received"	8.58 ug/L	10.4	82.4	(35%-112%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y655
Sample ID: 365553014
Matrix: WATER
Collect Date: 21-JAN-15 12:11
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270_SVOA_GCMS_SIM: COMMON "As Received"											
Acenaphthene 83-32-9	J	0.183	0.0481	20.0	ug/L	1	JMB3	01/26/15	1802	1452052	1
Acenaphthylene 208-96-8	U	0.00	0.0481	25.0	ug/L	1					
Anthracene 120-12-7	U	0.00	0.0481	10.0	ug/L	1					
Benzo(a)anthracene 56-55-3	U	0.00	0.0481	0.300	ug/L	1					
Benzo(a)pyrene 50-32-8	U	0.00	0.0481	0.500	ug/L	1					
Benzo(b)fluoranthene 205-99-2	U	0.00	0.0481	0.500	ug/L	1					
Benzo(ghi)perylene 191-24-2	U	0.00	0.0481	1.00	ug/L	1					
Benzo(k)fluoranthene 207-08-9	U	0.00	0.0481	0.500	ug/L	1					
Chrysene 218-01-9	U	0.00	0.0481	5.00	ug/L	1					
Dibenzo(a,h)anthracene 53-70-3	U	0.00	0.0481	1.00	ug/L	1					
Fluoranthene 206-44-0	U	0.00	0.0481	5.00	ug/L	1					
Fluorene 86-73-7	J	0.173	0.0481	3.00	ug/L	1					
Indeno(1,2,3-cd)pyrene 193-39-5	U	0.00	0.0481	1.00	ug/L	1					
Naphthalene 91-20-3	U	0.00	0.0481	20.0	ug/L	1					
Phenanthrene 85-01-8	U	0.00	0.0481	10.0	ug/L	1					
Pyrene 129-00-0	U	0.00	0.0481	20.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y655
Sample ID: 365553014

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
SW846 3510C	Prep Method 3510C for Liquid			RXC1	01/23/15	1020	1452051			

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D SIM PAH	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	8270_SVOA_GCMS_SIM: COMMON "As Received"	4.13 ug/L	4.81	85.8	(35%-112%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y667
Sample ID: 365553015
Matrix: WATER
Collect Date: 20-JAN-15 13:21
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Semi-Volatile-GC/MS										
8270_SVOA_GCMS_SIM: COMMON "As Received"										
Acenaphthene 83-32-9	U	0.00	0.102	20.0	ug/L	1	JMB3 01/26/15	1832	1452052	1
Acenaphthylene 208-96-8	U	0.00	0.102	25.0	ug/L	1				
Anthracene 120-12-7	U	0.00	0.102	10.0	ug/L	1				
Benzo(a)anthracene 56-55-3	U	0.00	0.102	0.408	ug/L	1				
Benzo(a)pyrene 50-32-8	U	0.00	0.102	0.500	ug/L	1				
Benzo(b)fluoranthene 205-99-2	U	0.00	0.102	0.500	ug/L	1				
Benzo(ghi)perylene 191-24-2	U	0.00	0.102	1.00	ug/L	1				
Benzo(k)fluoranthene 207-08-9	U	0.00	0.102	0.500	ug/L	1				
Chrysene 218-01-9	U	0.00	0.102	5.00	ug/L	1				
Dibenzo(a,h)anthracene 53-70-3	U	0.00	0.102	1.00	ug/L	1				
Fluoranthene 206-44-0	U	0.00	0.102	5.00	ug/L	1				
Fluorene 86-73-7	U	0.00	0.102	3.00	ug/L	1				
Indeno(1,2,3-cd)pyrene 193-39-5	U	0.00	0.102	1.00	ug/L	1				
Naphthalene 91-20-3	U	0.00	0.102	20.0	ug/L	1				
Phenanthrene 85-01-8	U	0.00	0.102	10.0	ug/L	1				
Pyrene 129-00-0	U	0.00	0.102	20.0	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y667
Sample ID: 365553015

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
SW846 3510C	Prep Method 3510C for Liquid			RXC1	01/23/15	1020	1452051			

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D SIM PAH	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	8270_SVOA_GCMS_SIM: COMMON "As Received"	7.69 ug/L	10.2	75.4	(35%-112%)

GEL LABORATORIES LLC
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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y670
Sample ID: 365553016
Matrix: WATER
Collect Date: 21-JAN-15 08:19
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS											
8270_SVOA_GCMS_SIM: COMMON "As Received"											
Acenaphthene 83-32-9	U	0.00	0.0481	20.0	ug/L	1	JMB3	01/26/15	1902	1452052	1
Acenaphthylene 208-96-8	U	0.00	0.0481	25.0	ug/L	1					
Anthracene 120-12-7	U	0.00	0.0481	10.0	ug/L	1					
Benzo(a)anthracene 56-55-3	U	0.00	0.0481	0.300	ug/L	1					
Benzo(a)pyrene 50-32-8	U	0.00	0.0481	0.500	ug/L	1					
Benzo(b)fluoranthene 205-99-2	U	0.00	0.0481	0.500	ug/L	1					
Benzo(ghi)perylene 191-24-2	U	0.00	0.0481	1.00	ug/L	1					
Benzo(k)fluoranthene 207-08-9	U	0.00	0.0481	0.500	ug/L	1					
Chrysene 218-01-9	U	0.00	0.0481	5.00	ug/L	1					
Dibenzo(a,h)anthracene 53-70-3	U	0.00	0.0481	1.00	ug/L	1					
Fluoranthene 206-44-0	U	0.00	0.0481	5.00	ug/L	1					
Fluorene 86-73-7	U	0.00	0.0481	3.00	ug/L	1					
Indeno(1,2,3-cd)pyrene 193-39-5	U	0.00	0.0481	1.00	ug/L	1					
Naphthalene 91-20-3	U	0.00	0.0481	20.0	ug/L	1					
Phenanthrene 85-01-8	U	0.00	0.0481	10.0	ug/L	1					
Pyrene 129-00-0	U	0.00	0.0481	20.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 17, 2015

Client Sample ID: B2Y670
Sample ID: 365553016

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
SW846 3510C	Prep Method 3510C for Liquid			RXC1	01/23/15	1020	1452051			

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D SIM PAH	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	8270_SVOA_GCMS_SIM: COMMON "As Received"	3.81 ug/L	4.81	79.2	(35%-112%)

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: February 17, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **365553**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1452052											
QC1203249274 LCS											
Acenaphthene	10.0		J	6.24	ug/L		62.4	(40%-107%)	JMB3	01/26/15	13:02
Acenaphthylene	10.0		J	6.36	ug/L		63.6	(37%-112%)			
Anthracene	10.0		J	6.62	ug/L		66.2	(44%-113%)			
Benzo(a)anthracene	10.0			6.53	ug/L		65.3	(47%-111%)			
Benzo(a)pyrene	10.0			6.69	ug/L		66.9	(46%-124%)			
Benzo(b)fluoranthene	10.0			7.61	ug/L		76.1	(48%-129%)			
Benzo(ghi)perylene	10.0		B	6.30	ug/L		63	(39%-124%)			
Benzo(k)fluoranthene	10.0			7.53	ug/L		75.3	(51%-125%)			
Chrysene	10.0			6.75	ug/L		67.5	(51%-117%)			
Dibenzo(a,h)anthracene	10.0		B	6.13	ug/L		61.3	(38%-128%)			
Fluoranthene	10.0			7.03	ug/L		70.3	(40%-120%)			
Fluorene	10.0			6.41	ug/L		64.1	(41%-113%)			
Indeno(1,2,3-cd)pyrene	10.0			6.49	ug/L		64.9	(39%-128%)			
Naphthalene	10.0		J	6.15	ug/L		61.5	(33%-102%)			
Phenanthrene	10.0		J	6.41	ug/L		64.1	(45%-111%)			
Pyrene	10.0		J	6.67	ug/L		66.7	(42%-123%)			
**5-alpha-Androstane	5.00			3.58	ug/L		71.6	(35%-112%)			
QC1203249273 MB											
Acenaphthene			U	0.050	ug/L					01/26/15	12:31
Acenaphthylene			U	0.050	ug/L						

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1452052											
Anthracene				U	0.050	ug/L					
Benzo(a)anthracene				U	0.050	ug/L				JMB3	01/26/15 12:31
Benzo(a)pyrene				U	0.050	ug/L					
Benzo(b)fluoranthene				U	0.050	ug/L					
Benzo(ghi)perylene				J	0.060	ug/L					
Benzo(k)fluoranthene				U	0.050	ug/L					
Chrysene				U	0.050	ug/L					
Dibenzo(a,h)anthracene				J	0.060	ug/L					
Fluoranthene				U	0.050	ug/L					
Fluorene				U	0.050	ug/L					
Indeno(1,2,3-cd)pyrene				U	0.050	ug/L					
Naphthalene				U	0.050	ug/L					
Phenanthrene				U	0.050	ug/L					
Pyrene				U	0.050	ug/L					
**5-alpha-Androstane	5.00				3.84	ug/L		76.8	(35%-112%)		
QC1203249275 365481003 MS											
Acenaphthene	20.0	U	0.0442	J	12.4	ug/L		61.9	(38%-103%)		01/26/15 14:02
Acenaphthylene	20.0	U	0.0442	J	12.7	ug/L		63.6	(36%-104%)		
Anthracene	20.0	U	0.0442		13.3	ug/L		66.4	(28%-113%)		
Benzo(a)anthracene	20.0	U	0.0442		13.8	ug/L		68.9	(43%-103%)		
Benzo(a)pyrene	20.0	U	0.0442		14.0	ug/L		69.9	(28%-121%)		
Benzo(b)fluoranthene	20.0	U	0.0442		15.5	ug/L		77.7	(33%-123%)		
Benzo(ghi)perylene	20.0	BJ	0.0442	B	13.0	ug/L		64.8	(39%-124%)		

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1452052											
Benzo(k)fluoranthene	20.0	U	0.0442		15.1	ug/L		75.6	(39%-119%)	JMB3	01/26/15 14:02
Chrysene	20.0	U	0.0442		13.7	ug/L		68.5	(51%-117%)		
Dibenzo(a,h)anthracene	20.0	BJ	0.0442	B	12.0	ug/L		59.7	(30%-119%)		
Fluoranthene	20.0	U	0.0442		15.3	ug/L		76.3	(36%-120%)		
Fluorene	20.0	U	0.0442		13.1	ug/L		65.7	(41%-113%)		
Indeno(1,2,3-cd)pyrene	20.0	U	0.0442		13.6	ug/L		68.2	(39%-128%)		
Naphthalene	20.0	U	0.0442	J	12.1	ug/L		60.4	(33%-102%)		
Phenanthrene	20.0	U	0.0442		13.1	ug/L		65.5	(39%-107%)		
Pyrene	20.0	U	0.0442	J	13.8	ug/L		69.1	(28%-125%)		
**5-alpha-Androstane	10.0		3.70		8.48	ug/L		84.8	(35%-112%)		
QC1203249276 365481003 MSD											
Acenaphthene	20.0	U	0.0442	J	12.7	ug/L	2.39	63.4	(0%-20%)		01/26/15 14:32
Acenaphthylene	20.0	U	0.0442	J	13.2	ug/L	3.70	66	(0%-20%)		
Anthracene	20.0	U	0.0442		13.5	ug/L	1.79	67.6	(0%-20%)		
Benzo(a)anthracene	20.0	U	0.0442		13.8	ug/L	0.434	69.2	(0%-20%)		
Benzo(a)pyrene	20.0	U	0.0442		14.2	ug/L	1.56	71	(0%-26%)		
Benzo(b)fluoranthene	20.0	U	0.0442		15.6	ug/L	0.129	77.8	(0%-20%)		
Benzo(ghi)perylene	20.0	BJ	0.0442	B	12.9	ug/L	0.617	64.4	(0%-20%)		
Benzo(k)fluoranthene	20.0	U	0.0442		15.2	ug/L	0.396	75.9	(0%-20%)		
Chrysene	20.0	U	0.0442		13.8	ug/L	0.437	68.8	(0%-20%)		
Dibenzo(a,h)anthracene	20.0	BJ	0.0442	B	12.5	ug/L	4.57	62.5	(0%-20%)		
Fluoranthene	20.0	U	0.0442		15.0	ug/L	1.85	74.9	(0%-20%)		

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS												
Batch 1452052												
Fluorene	20.0	U	0.0442		13.4	ug/L	1.81	66.9	(0%-20%)	JMB3	01/26/15	14:32
Indeno(1,2,3-cd)pyrene	20.0	U	0.0442		13.8	ug/L	1.17	69	(0%-20%)			
Naphthalene	20.0	U	0.0442	J	12.7	ug/L	4.69	63.3	(0%-20%)			
Phenanthrene	20.0	U	0.0442		13.2	ug/L	0.457	65.8	(0%-20%)			
Pyrene	20.0	U	0.0442	J	13.7	ug/L	1.16	68.3	(0%-20%)			
**5-alpha-Androstane	10.0		3.70		8.22	ug/L		82.2	(35%-112%)			

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
- N Spike Sample recovery is outside control limits.
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

FID Diesel Range Organics Analysis

Case Narrative

Diesel Range Organics
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL365553
Work Order #:

Method/Analysis Information

Procedure:	**Analysis of Diesel Range Organics by Flame Ionization Detector**
Analytical Method:	NWTPH-Dx
Prep Method:	SW846 3535A
Analytical Batch Number:	1452783
Prep Batch Number:	1452781

Sample Analysis

The following samples were analyzed using the analytical protocol as established in NWTPH-Dx:

Sample ID	Client ID
365553009	B2Y640
365553010	B2Y643
365553011	B2Y646
365553012	B2Y649
365553013	B2Y652
365553014	B2Y655
365553015	B2Y667
365553016	B2Y670
1203251112	MB for batch 1452781
1203251113	Laboratory Control Sample (LCS)
1203251114	365481004(B2Y661) Matrix Spike (MS)
1203251115	365481004(B2Y661) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-003 REV# 25.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria. Analyte peaks eluted within the established retention time windows for this method.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
CPRC sample 365481004 (B2Y661) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS recovery was within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recovery was within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. Analyte peaks eluted within the established retention time windows for this method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Electronic Package Comment

This package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative.

Data Exception (DER) Documentation
Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A DER was not required for this SDG in this batch.

Manual Integrations
Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The additional comments were not required.

System Configuration

The Diesel Range Organics analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
FID7.I	Agilent Gas Chromatograph	Agilent 6890N GC/FID	DB-5MS	30m x 0.25mm, 0.25um(J&W)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL365553 GEL Work Order: 365553

The Qualifiers in this report are defined as follows:

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.

RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Jimin Cao **Name: Jimin Cao**

Date: 30 JAN 2015 **Title: Data Validator**

Sample Data Summary

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: January 28, 2015

Client Sample ID: B2Y640
Sample ID: 365553009
Matrix: WATER
Collect Date: 21-JAN-15 09:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Diesel Range Organics										
(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"										
Diesel Range Organics		447	52.6	211	ug/L	1	BYT1 01/27/15	2115	1452783	1
DRO										
Motor Oil		364	52.6	211	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	3535A DRO IN LIQ PREP	RXC1	01/27/15	1015	1452781

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Dx	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"	14.6 ug/L	21.1	69.3	(50%-150%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: January 28, 2015

Client Sample ID: B2Y643
Sample ID: 365553010
Matrix: WATER
Collect Date: 21-JAN-15 09:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Diesel Range Organics										
(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"										
Diesel Range Organics		576	53.2	213	ug/L	1	BYT1 01/27/15	2153	1452783	1
DRO										
Motor Oil		402	53.2	213	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	3535A DRO IN LIQ PREP	RXC1	01/27/15	1015	1452781

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Dx	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"	17.6 ug/L	21.3	82.7	(50%-150%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: January 28, 2015

Client Sample ID: B2Y646
Sample ID: 365553011
Matrix: WATER
Collect Date: 21-JAN-15 10:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Diesel Range Organics										
(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"										
Diesel Range Organics		2880	53.8	215	ug/L	1	BYT1 01/27/15	2232	1452783	1
DRO										
Motor Oil		980	53.8	215	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	3535A DRO IN LIQ PREP	RXC1	01/27/15	1015	1452781

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Dx	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"	20.1 ug/L	21.5	93.3	(50%-150%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: January 28, 2015

Client Sample ID: B2Y649
Sample ID: 365553012
Matrix: WATER
Collect Date: 21-JAN-15 11:31
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Diesel Range Organics										
(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"										
Diesel Range Organics		2500	54.3	217	ug/L	1	BYT1 01/27/15	2310	1452783	1
DRO										
Motor Oil		938	54.3	217	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	3535A DRO IN LIQ PREP	RXC1	01/27/15	1015	1452781

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Dx	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"	21.8 ug/L	21.7	100	(50%-150%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: January 28, 2015

Client Sample ID: B2Y652
Sample ID: 365553013
Matrix: WATER
Collect Date: 20-JAN-15 14:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Diesel Range Organics										
(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"										
Diesel Range Organics		647	52.6	211	ug/L	1	BYT1 01/27/15	2348	1452783	1
DRO										
Motor Oil		832	52.6	211	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	3535A DRO IN LIQ PREP	RXC1	01/27/15	1015	1452781

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Dx	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"	15.6 ug/L	21.1	74.1	(50%-150%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: January 28, 2015

Client Sample ID: B2Y655
Sample ID: 365553014
Matrix: WATER
Collect Date: 21-JAN-15 12:11
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"											
Diesel Range Organics		1060	48.1	192	ug/L	1	BYT1	01/28/15	0027	1452783	1
DRO											
Motor Oil		328	48.1	192	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	3535A DRO IN LIQ PREP	RXC1	01/27/15	1015	1452781

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Dx	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"	15.0 ug/L	19.2	77.9	(50%-150%)

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PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: January 28, 2015

Client Sample ID: B2Y667
Sample ID: 365553015
Matrix: WATER
Collect Date: 20-JAN-15 13:21
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Diesel Range Organics										
(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"										
Diesel Range Organics DRO	U	0.00	52.1	208	ug/L	1	BYT1 01/28/15	0106	1452783	1
Motor Oil	J	77.5	52.1	208	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	3535A DRO IN LIQ PREP	RXC1	01/27/15	1015	1452781

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Dx	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"	15.2 ug/L	20.8	72.9	(50%-150%)

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Certificate of Analysis

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Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: January 28, 2015

Client Sample ID: B2Y670
Sample ID: 365553016
Matrix: WATER
Collect Date: 21-JAN-15 08:19
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Diesel Range Organics										
(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"										
Diesel Range Organics DRO	U	0.00	48.1	192	ug/L	1	BYT1 01/28/15	0144	1452783	1
Motor Oil	J	120	48.1	192	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	3535A DRO IN LIQ PREP	RXC1	01/27/15	1015	1452781

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Dx	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	(WTPH_DIESEL:COMMON) + (MOTOR OIL) "As Received"	14.7 ug/L	19.2	76.5	(50%-150%)

Quality Control Summary

GEL LABORATORIES LLC
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QC Summary

Report Date: January 28, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **365553**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Diesel Range Organics											
Batch 1452783											
QC1203251113 LCS											
Diesel Range Organics	2000				1740	ug/L		86.8	(70%-130%)	BYT1	01/27/15 16:43
Motor Oil	2000				2050	ug/L		103	(70%-130%)		
**o-Terphenyl	20.0				19.0	ug/L		95.2	(50%-150%)		
QC1203251112 MB											
Diesel Range Organics				U	50.0	ug/L					01/27/15 16:05
Motor Oil				U	50.0	ug/L					
**o-Terphenyl	20.0				15.0	ug/L		75.2	(50%-150%)		
QC1203251114 365481004 MS											
Diesel Range Organics	1900	U	47.6		1640	ug/L		85.8	(70%-130%)		01/27/15 18:40
Motor Oil	1900	U	47.6		1820	ug/L		95.4	(70%-130%)		
**o-Terphenyl	19.0		15.5		16.4	ug/L		86.1	(50%-150%)		
QC1203251115 365481004 MSD											
Diesel Range Organics	1900	U	47.6		1500	ug/L	8.43	78.9	(0%-20%)		01/27/15 19:18
Motor Oil	1900	U	47.6		1680	ug/L	7.61	88.4	(0%-20%)		
**o-Terphenyl	19.0		15.5		18.0	ug/L		94.5	(50%-150%)		

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

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QC Summary

Workorder: 365553

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

N Spike Sample recovery is outside control limits.

P Aroclor target analyte with greater than 25% difference between column analyses.

T Spike and/or spike duplicate sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

GC Volatiles (GRO) Analysis

Case Narrative

GC Volatiles (GRO)
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL365553
Work Order #: 365553

Method/Analysis Information

Procedure:	**Volatile Total Petroleum Hydrocarbons by Flame Ionization Detector**
Analytical Method:	NWTPH-Gx
Analytical Batch Number:	1454683

Sample Analysis

The following client and quality control samples were analyzed to complete this sample delivery group/work order using the methods referenced in the Analysis Information section:

Sample ID	Client ID
365553009	B2Y640
365553010	B2Y643
365553011	B2Y646
365553012	B2Y649
365553013	B2Y652
365553014	B2Y655
365553015	B2Y667
365553016	B2Y670
1203256238	MB for batch 1454683
1203256239	Laboratory Control Sample (LCS)
1203256240	365553014(B2Y655) Post Spike (PS)
1203256241	365553014(B2Y655) Post Spike Duplicate (PSD)

The samples in this SDG were analyzed on an "as received" basis.

NOTE: For volatile organic analyses the matrix spike designations may be indicated as "PS" or "PSD". The "PS" designation (post spike) indicates that the matrix was fortified prior to analysis but after applying any prep factors, such as a dilution. The laboratory considers the MS/MSD and PS/PSD designations interchangeable.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-004 REV# 25.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG). See the calibration history report for a list of data files that were used to generate the initial calibration curve in the Standard Data Section of this data package.

CCV Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria. Analyte peaks eluted within the established retention time windows for this method.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
Surrogate recoveries, in all samples and quality control samples, were within the acceptance limits.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Sample 365553014 (B2Y655) was selected for analysis as the matrix spike.

Spike Recovery Statement
The GRO recovery was within the acceptance limits.

Relative Percent Difference (RPD) Statement
The RPD between the matrix spike pair met the acceptance limits.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integrations
Data files associated with the initial calibration, continuing calibration check(s), and samples may have been manually integrated to correct misidentification of peaks by the integration software.

Additional Comments
GRO was not detected above the PQL in any of the samples, therefore no additional analyses were analyzed.

System Configuration

The GRO Organics analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description	P & T Trap
VOC4A.I	Agilent 6890N GC/FID w/ OI 4560/Archon Autosampler	HP6890N GC/FID	DB-624	0.53mm x 3.0u x 15m	OI #10

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL365553 GEL Work Order: 365553

The Qualifiers in this report are defined as follows:

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.

RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Erin Haubert **Name: Erin Haubert**

Date: 16 FEB 2015 **Title: Data Validator**

Sample Data Summary

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 16, 2015

Client Sample ID: B2Y640
Sample ID: 365553009
Matrix: WATER
Collect Date: 21-JAN-15 09:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatiles GRO Organics											
NWTPH-Gx GRO Liquid "As Received"											
Gasoline Range Organics	U	0.00	16.7	50.0	ug/L	1	ACJ	02/02/15	1536	1454683	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Gx	

Surrogate/Tracer recovery	Test	Result		Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	NWTPH-Gx GRO Liquid "As Received"	49.6	ug/L	50.0	99.2	(50%-150%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 16, 2015

Client Sample ID: B2Y643
Sample ID: 365553010
Matrix: WATER
Collect Date: 21-JAN-15 09:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatiles GRO Organics											
NWTPH-Gx GRO Liquid "As Received"											
Gasoline Range Organics	U	0.00	16.7	50.0	ug/L	1	ACJ	02/02/15	1603	1454683	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Gx	

Surrogate/Tracer recovery	Test	Result		Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	NWTPH-Gx GRO Liquid "As Received"	47.3	ug/L	50.0	94.5	(50%-150%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 16, 2015

Client Sample ID: B2Y646
Sample ID: 365553011
Matrix: WATER
Collect Date: 21-JAN-15 10:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatiles GRO Organics											
NWTPH-Gx GRO Liquid "As Received"											
Gasoline Range Organics	J	27.8	16.7	50.0	ug/L	1	ACJ	02/02/15	1631	1454683	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Gx	

Surrogate/Tracer recovery	Test	Result		Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	NWTPH-Gx GRO Liquid "As Received"	50.9	ug/L	50.0	102	(50%-150%)

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 16, 2015

Client Sample ID: B2Y649
Sample ID: 365553012
Matrix: WATER
Collect Date: 21-JAN-15 11:31
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatiles GRO Organics											
NWTPH-Gx GRO Liquid "As Received"											
Gasoline Range Organics	U	10.6	16.7	50.0	ug/L	1	ACJ	02/02/15	1659	1454683	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Gx	

Surrogate/Tracer recovery	Test	Result		Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	NWTPH-Gx GRO Liquid "As Received"	44.9	ug/L	50.0	89.8	(50%-150%)

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Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 16, 2015

Client Sample ID: B2Y652
Sample ID: 365553013
Matrix: WATER
Collect Date: 20-JAN-15 14:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatiles GRO Organics											
NWTPH-Gx GRO Liquid "As Received"											
Gasoline Range Organics	U	0.00	16.7	50.0	ug/L	1	ACJ	02/02/15	1727	1454683	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Gx	

Surrogate/Tracer recovery	Test	Result		Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	NWTPH-Gx GRO Liquid "As Received"	43.2	ug/L	50.0	86.4	(50%-150%)

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Certificate of Analysis

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Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 16, 2015

Client Sample ID: B2Y655
Sample ID: 365553014
Matrix: WATER
Collect Date: 21-JAN-15 12:11
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatiles GRO Organics											
NWTPH-Gx GRO Liquid "As Received"											
Gasoline Range Organics	U	13.9	16.7	50.0	ug/L	1	ACJ	02/02/15	1823	1454683	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Gx	

Surrogate/Tracer recovery	Test	Result		Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	NWTPH-Gx GRO Liquid "As Received"	46.1	ug/L	50.0	92.1	(50%-150%)

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Certificate of Analysis

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Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 16, 2015

Client Sample ID: B2Y667
Sample ID: 365553015
Matrix: WATER
Collect Date: 20-JAN-15 13:21
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatiles GRO Organics											
NWTPH-Gx GRO Liquid "As Received"											
Gasoline Range Organics	U	12.1	16.7	50.0	ug/L	1	ACJ	02/02/15	1851	1454683	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Gx	

Surrogate/Tracer recovery	Test	Result		Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	NWTPH-Gx GRO Liquid "As Received"	48.2	ug/L	50.0	96.4	(50%-150%)

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Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 16, 2015

Client Sample ID: B2Y670
Sample ID: 365553016
Matrix: WATER
Collect Date: 21-JAN-15 08:19
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatiles GRO Organics											
NWTPH-Gx GRO Liquid "As Received"											
Gasoline Range Organics	U	0.00	16.7	50.0	ug/L	1	ACJ	02/02/15	1919	1454683	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Gx	

Surrogate/Tracer recovery	Test	Result		Nominal	Recovery%	Acceptable Limits
Bromofluorobenzene	NWTPH-Gx GRO Liquid "As Received"	48.4	ug/L	50.0	96.8	(50%-150%)

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: February 16, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **365553**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatiles GRO Organics											
Batch 1454683											
QC1203256239 LCS											
Gasoline Range Organics	500				490	ug/L		98	(70%-130%)	ACJ	02/02/15 11:47
**Bromofluorobenzene	50.0				56.0	ug/L		112	(50%-150%)		
QC1203256238 MB											
Gasoline Range Organics				U	16.7	ug/L					02/02/15 12:15
**Bromofluorobenzene	50.0				51.5	ug/L		103	(50%-150%)		
QC1203256240 365553014 PS											
Gasoline Range Organics	500	U	13.9		473	ug/L		91.7	(70%-130%)		02/02/15 20:15
**Bromofluorobenzene	50.0		46.1		47.0	ug/L		93.9	(50%-150%)		
QC1203256241 365553014 PSD											
Gasoline Range Organics	500	U	13.9		452	ug/L	4.50	87.6	(0%-20%)		02/02/15 20:43
**Bromofluorobenzene	50.0		46.1		47.3	ug/L		94.7	(50%-150%)		

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
- N Spike Sample recovery is outside control limits.
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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QC Summary

Workorder: 365553

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL365553
Work Order #: 365553

Sample ID	Client ID
365553009	B2Y640
365553010	B2Y643
365553011	B2Y646
365553012	B2Y649
365553013	B2Y652
365553014	B2Y655
365553015	B2Y667
365553016	B2Y670
1203249378	Method Blank (MB)**ICP**
1203249379	Laboratory Control Sample (LCS)
1203249382	365553014(B2Y655L) Serial Dilution (SD)
1203249380	365553014(B2Y655S) Matrix Spike (MS)
1203249381	365553014(B2Y655SD) Matrix Spike Duplicate (MSD)
1203249383	Method Blank (MB)**ICP-MS**
1203267570	Method Blank (MB)**ICP-MS**
1203249384	Laboratory Control Sample (LCS)
1203267571	Laboratory Control Sample (LCS)
1203249387	365553016(B2Y670L) Serial Dilution (SD)
1203267574	365553016(B2Y670L) Serial Dilution (SD)
1203249385	365553016(B2Y670S) Matrix Spike (MS)
1203267572	365553016(B2Y670S) Matrix Spike (MS)
1203249386	365553016(B2Y670SD) Matrix Spike Duplicate (MSD)
1203267573	365553016(B2Y670SD) Matrix Spike Duplicate (MSD)

Sample Analysis

The samples in this SDG were analyzed on an "as received" basis.

Method/Analysis Information

Analytical Batch:	1452100, 1452102 and 1458820
Prep Batch :	1452099, 1452101 and 1458819
Standard Operating Procedures:	GL-MA-E-013 REV# 23, GL-MA-E-006 REV# 11 and GL-MA-E-014 REV# 25
Analytical Method:	SW846 3005A/6010C and SW846 3005A/6020A
Prep Method :	SW846 3005A

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with an ESI SC-FAST introduction, cyclonic spray chamber, and yttrium or scandium internal standard.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum.

The Metals analysis - ICPMS was performed on a PerkinElmer NexION 350X ICPMS. The instrument is equipped with a ESI PFA-ST nebulizer, quadrupole mass spectrometer, dual mode electron multiplier detector, and Kinetic Energy Discrimination (KED) technology. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL/PQL Requirements
The CRDL/PQL standard recoveries met the referenced advisory control limits.

ICSA/ICSAB Statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blanks (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 365553014 (B2Y655)-ICP and 365553016 (B2Y670)-ICP-MS.

Matrix Spike (MS/MSD) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike met the recommended quality control acceptance criteria for percent recoveries for all applicable analytes.

MS/MSD Relative Percent Difference (RPD) Statement

The relative percent difference (RPD) obtained from the designated matrix spike duplicate (MSD) is evaluated based on acceptance criteria of 20%. The RPD values between qualifying analyte results in the MS and MSD were within the acceptance limits.

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. All applicable analytes in the serial dilution (SDILT) demonstrated acceptable correlation to its associated sample and met the established acceptance percent difference criteria.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology. Holding time is measured by comparison of the date and time of sample collection to the date and time of sample preparation and analysis. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. Sample 365553014 (B2Y655)-ICP-MS was diluted to ensure that the manganese concentration was within the linear calibration range of the instrument.

Preparation Information
Samples 365553009 (B2Y640), 365553010 (B2Y643), 365553011 (B2Y646), 365553012 (B2Y649), 365553013 (B2Y652) and 365553015 (B2Y667)-ICP-MS were prepared at a five times dilution factor because sample volumes were limited.

Miscellaneous Information

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
A data exception report was not required for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL365553 GEL Work Order: 365553

The Qualifiers in this report are defined as follows:

* Duplicate analysis not within control limits

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

D Results are reported from a diluted aliquot of sample.

N Spike Sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Pat Steele **Name: Patricia Steele**

Date: 20 FEB 2015 **Title: Data Validator**

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y640
Sample ID: 365553009
Matrix: WATER
Collect Date: 21-JAN-15 09:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
6010_METALS_ICP: GW 07 (BIOREM) "As Received"												
Boron 7440-42-8	B	29.2	+/-7.69	15.0	50.0	ug/L	1	HSC	01/30/15	1306	1452100	1
Calcium 7440-70-2		154000	+/-30800	50.0	200	ug/L	1					
Iron 7439-89-6		312	+/-63.1	30.0	100	ug/L	1					
Magnesium 7439-95-4		28100	+/-5630	110	300	ug/L	1					
Phosphorous 7723-14-0	U	35.8	+/-21.2	60.0	150	ug/L	1					
Potassium 7440-09-7		6980	+/-1400	50.0	150	ug/L	1					
Silicon 7440-21-3		16300	+/-3270	25.0	100	ug/L	1					
Sodium 7440-23-5		50400	+/-10100	100	300	ug/L	1					
Vanadium 7440-62-2	B	4.71	+/-0.999	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5		159	+/-32.3	15.0	50.0	ug/L	1	BAJ	02/16/15	1716	1452102	2
Antimony 7440-36-0	U	0.422	+/-0.344	1.00	5.00	ug/L	1					
Barium 7440-39-3		133	+/-26.6	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.051	+/-0.0674	0.200	2.00	ug/L	1					
Cadmium 7440-43-9	B	0.433	+/-0.094	0.110	2.00	ug/L	1					
Chromium 7440-47-3	U	0.752	+/-0.683	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	1.61	+/-0.324	0.100	4.00	ug/L	1					
Copper	B	2.55	+/-0.522	0.350	8.00	ug/L	1					

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PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y640 Project: CPRC0X15007
Sample ID: 365553009 Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
7440-50-8 Lead	U	0.297	+/-0.177	0.500	2.00	ug/L	1					
7439-92-1 Molybdenum	B	2.16	+/-0.435	0.165	20.0	ug/L	1					
7439-98-7 Nickel		2.35	+/-0.498	0.500	2.00	ug/L	1					
7440-02-0 Silver	U	0.047	+/-0.0673	0.200	2.00	ug/L	1					
7440-22-4 Strontium		682	+/-136	2.00	10.0	ug/L	1					
7440-24-6 Thallium	U	0.078	+/-0.151	0.450	2.00	ug/L	1					
7440-28-0 Thorium	U	0.176	+/-0.132	0.383	2.00	ug/L	1					
7440-29-1 Tin	U	0.608	+/-0.355	1.00	5.00	ug/L	1					
7440-31-5 Uranium		3.30	+/-0.660	0.067	0.200	ug/L	1					
7440-61-1 Zinc		15.9	+/-3.39	3.50	10.0	ug/L	1					
7440-66-6 Arsenic	U	-3.96	+/-2.94	8.50	25.0	ug/L	1	SKJ	02/19/15	1911	1458820	3
7440-38-2 Selenium	U	0.770	+/-2.50	7.50	25.0	ug/L	1					
7782-49-2 Boron	B	28.5	+/-8.77	20.0	75.0	ug/L	1	SKJ	02/20/15	1051	1458820	4
7440-42-8 Manganese		533	+/-107	5.00	25.0	ug/L	1					
7439-96-5												

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	02/18/15	1741	1458819
SW846 3005A	ICP-MS 3005A PREP	JXM5	01/23/15	0800	1452101
SW846 3005A	SW846 3005A for 6010C	JXM5	01/23/15	0800	1452099

The following Analytical Methods were performed

Method	Description	Analyst Comments

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Address : MSIN R3-50 CHPRC
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Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y640
Sample ID: 365553009

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6020A	
3	SW846 3005A/6020A	
4	SW846 3005A/6020A	

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Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y643
Sample ID: 365553010
Matrix: WATER
Collect Date: 21-JAN-15 09:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
6010_METALS_ICP: GW 07 (BIOREM) "As Received"												
Boron 7440-42-8	B	24.4	+/-6.99	15.0	50.0	ug/L	1	HSC	01/30/15	1309	1452100	1
Calcium 7440-70-2		137000	+/-27300	50.0	200	ug/L	1					
Iron 7439-89-6		122	+/-26.3	30.0	100	ug/L	1					
Magnesium 7439-95-4		25300	+/-5060	110	300	ug/L	1					
Phosphorous 7723-14-0	U	52.3	+/-22.6	60.0	150	ug/L	1					
Potassium 7440-09-7		6290	+/-1260	50.0	150	ug/L	1					
Silicon 7440-21-3		14300	+/-2850	25.0	100	ug/L	1					
Sodium 7440-23-5		43300	+/-8660	100	300	ug/L	1					
Vanadium 7440-62-2	B	3.70	+/-0.811	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5		66.5	+/-14.2	15.0	50.0	ug/L	1	BAJ	02/16/15	1719	1452102	2
Antimony 7440-36-0	U	0.557	+/-0.351	1.00	5.00	ug/L	1					
Barium 7440-39-3		108	+/-21.5	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.016	+/-0.0667	0.200	2.00	ug/L	1					
Cadmium 7440-43-9	B	0.216	+/-0.0567	0.110	2.00	ug/L	1					
Chromium 7440-47-3	U	1.57	+/-0.737	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	2.25	+/-0.451	0.100	4.00	ug/L	1					
Copper	B	3.92	+/-0.793	0.350	8.00	ug/L	1					

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PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y643 Project: CPRC0X15007
Sample ID: 365553010 Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
7440-50-8 Lead	B	0.703	+/-0.218	0.500	2.00	ug/L	1					
7439-92-1 Molybdenum	B	1.61	+/-0.326	0.165	20.0	ug/L	1					
7439-98-7 Nickel		3.23	+/-0.667	0.500	2.00	ug/L	1					
7440-02-0 Silver	U	0.022	+/-0.0668	0.200	2.00	ug/L	1					
7440-22-4 Strontium		615	+/-123	2.00	10.0	ug/L	1					
7440-24-6 Thallium	U	0.029	+/-0.150	0.450	2.00	ug/L	1					
7440-28-0 Thorium	U	0.054	+/-0.128	0.383	2.00	ug/L	1					
7440-29-1 Tin	U	0.623	+/-0.356	1.00	5.00	ug/L	1					
7440-31-5 Uranium		3.32	+/-0.665	0.067	0.200	ug/L	1					
7440-61-1 Zinc	B	5.35	+/-1.58	3.50	10.0	ug/L	1					
7440-66-6 Arsenic	U	-4.73	+/-2.99	8.50	25.0	ug/L	1	SKJ	02/19/15	1918	1458820	3
7440-38-2 Selenium	U	0.795	+/-2.51	7.50	25.0	ug/L	1					
7782-49-2 Boron	U	18.2	+/-7.60	20.0	75.0	ug/L	1	SKJ	02/20/15	1054	1458820	4
7440-42-8 Manganese		735	+/-147	5.00	25.0	ug/L	1					
7439-96-5												

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	02/18/15	1741	1458819
SW846 3005A	ICP-MS 3005A PREP	JXM5	01/23/15	0800	1452101
SW846 3005A	SW846 3005A for 6010C	JXM5	01/23/15	0800	1452099

The following Analytical Methods were performed

Method	Description	Analyst Comments

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y643
Sample ID: 365553010

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6020A	
3	SW846 3005A/6020A	
4	SW846 3005A/6020A	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y646
Sample ID: 365553011
Matrix: WATER
Collect Date: 21-JAN-15 10:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
6010_METALS_ICP: GW 07 (BIOREM) "As Received"												
Boron 7440-42-8	B	24.0	+/-6.93	15.0	50.0	ug/L	1	HSC	01/30/15	1312	1452100	1
Calcium 7440-70-2		181000	+/-36200	50.0	200	ug/L	1					
Iron 7439-89-6		1050	+/-211	30.0	100	ug/L	1					
Magnesium 7439-95-4		33500	+/-6710	110	300	ug/L	1					
Phosphorous 7723-14-0	B	91.8	+/-27.2	60.0	150	ug/L	1					
Potassium 7440-09-7		5610	+/-1120	50.0	150	ug/L	1					
Silicon 7440-21-3		14300	+/-2870	25.0	100	ug/L	1					
Sodium 7440-23-5		38500	+/-7700	100	300	ug/L	1					
Vanadium 7440-62-2	B	1.62	+/-0.464	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5		46.2	+/-10.5	15.0	50.0	ug/L	1	BAJ	02/16/15	1721	1452102	2
Antimony 7440-36-0	U	0.154	+/-0.335	1.00	5.00	ug/L	1					
Barium 7440-39-3		194	+/-38.8	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.019	+/-0.0668	0.200	2.00	ug/L	1					
Cadmium 7440-43-9	B	0.165	+/-0.0493	0.110	2.00	ug/L	1					
Chromium 7440-47-3	U	1.07	+/-0.700	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.176	+/-0.0485	0.100	4.00	ug/L	1					
Copper	B	5.76	+/-1.16	0.350	8.00	ug/L	1					

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y646
Sample ID: 365553011

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP-MS											
6020_METALS_ICPMS: GW 01 "As Received"											
7440-50-8 Lead	B	1.66	+/-0.371	0.500	2.00	ug/L	1				
7439-92-1 Molybdenum	B	0.932	+/-0.194	0.165	20.0	ug/L	1				
7439-98-7 Nickel	B	1.35	+/-0.317	0.500	2.00	ug/L	1				
7440-02-0 Silver	U	0.017	+/-0.0668	0.200	2.00	ug/L	1				
7440-22-4 Strontium		856	+/-171	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.007	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Thorium	U	0.048	+/-0.128	0.383	2.00	ug/L	1				
7440-29-1 Tin	U	0.234	+/-0.337	1.00	5.00	ug/L	1				
7440-31-5 Uranium		1.97	+/-0.395	0.067	0.200	ug/L	1				
7440-61-1 Zinc		17.2	+/-3.62	3.50	10.0	ug/L	1				
7440-66-6 Arsenic	U	-3.24	+/-2.91	8.50	25.0	ug/L	1	SKJ	02/19/15 1924	1458820	3
7440-38-2 Selenium	U	-0.065	+/-2.50	7.50	25.0	ug/L	1				
7782-49-2 Boron	B	21.5	+/-7.93	20.0	75.0	ug/L	1	SKJ	02/20/15 1056	1458820	4
7440-42-8 Manganese		3240	+/-648	5.00	25.0	ug/L	1				
7439-96-5											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	02/18/15	1741	1458819
SW846 3005A	ICP-MS 3005A PREP	JXM5	01/23/15	0800	1452101
SW846 3005A	SW846 3005A for 6010C	JXM5	01/23/15	0800	1452099

The following Analytical Methods were performed

Method	Description	Analyst Comments

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y646
Sample ID: 365553011

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6020A	
3	SW846 3005A/6020A	
4	SW846 3005A/6020A	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y649
Sample ID: 365553012
Matrix: WATER
Collect Date: 21-JAN-15 11:31
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
6010_METALS_ICP: GW 07 (BIOREM) "As Received"												
Boron 7440-42-8	B	28.3	+/-7.55	15.0	50.0	ug/L	1	HSC	01/30/15	1316	1452100	1
Calcium 7440-70-2		201000	+/-40200	50.0	200	ug/L	1					
Iron 7439-89-6		803	+/-161	30.0	100	ug/L	1					
Magnesium 7439-95-4		40700	+/-8140	110	300	ug/L	1					
Phosphorous 7723-14-0	B	131	+/-33.0	60.0	150	ug/L	1					
Potassium 7440-09-7		6530	+/-1310	50.0	150	ug/L	1					
Silicon 7440-21-3		17200	+/-3440	25.0	100	ug/L	1					
Sodium 7440-23-5		62100	+/-12400	100	300	ug/L	1					
Vanadium 7440-62-2	B	1.42	+/-0.438	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5		83.4	+/-17.4	15.0	50.0	ug/L	1	BAJ	02/16/15	1724	1452102	2
Antimony 7440-36-0	U	0.272	+/-0.338	1.00	5.00	ug/L	1					
Barium 7440-39-3		97.4	+/-19.5	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.007	+/-0.0667	0.200	2.00	ug/L	1					
Cadmium 7440-43-9	U	0.061	+/-0.0386	0.110	2.00	ug/L	1					
Chromium 7440-47-3	U	0.946	+/-0.693	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.189	+/-0.0504	0.100	4.00	ug/L	1					
Copper	B	2.70	+/-0.552	0.350	8.00	ug/L	1					

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y649 Project: CPRC0X15007
Sample ID: 365553012 Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP-MS											
6020_METALS_ICPMS: GW 01 "As Received"											
7440-50-8 Lead	B	0.721	+/-0.220	0.500	2.00	ug/L	1				
7439-92-1 Molybdenum	B	0.634	+/-0.138	0.165	20.0	ug/L	1				
7439-98-7 Nickel	B	1.02	+/-0.263	0.500	2.00	ug/L	1				
7440-02-0 Silver	U	0.006	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium		901	+/-180	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.004	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Thorium	U	0.041	+/-0.128	0.383	2.00	ug/L	1				
7440-29-1 Tin	B	1.85	+/-0.498	1.00	5.00	ug/L	1				
7440-31-5 Uranium		2.02	+/-0.405	0.067	0.200	ug/L	1				
7440-61-1 Zinc		17.5	+/-3.70	3.50	10.0	ug/L	1				
7440-66-6 Arsenic	U	-2.95	+/-2.89	8.50	25.0	ug/L	1	SKJ	02/19/15 1931	1458820	3
7440-38-2 Selenium	U	0.530	+/-2.50	7.50	25.0	ug/L	1				
7782-49-2 Boron	B	20.5	+/-7.83	20.0	75.0	ug/L	1	SKJ	02/20/15 1057	1458820	4
7440-42-8 Manganese		1590	+/-318	5.00	25.0	ug/L	1				
7439-96-5											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	02/18/15	1741	1458819
SW846 3005A	ICP-MS 3005A PREP	JXM5	01/23/15	0800	1452101
SW846 3005A	SW846 3005A for 6010C	JXM5	01/23/15	0800	1452099

The following Analytical Methods were performed

Method	Description	Analyst Comments

GEL LABORATORIES LLC
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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y649
Sample ID: 365553012

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6020A	
3	SW846 3005A/6020A	
4	SW846 3005A/6020A	

GEL LABORATORIES LLC
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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y652
Sample ID: 365553013
Matrix: WATER
Collect Date: 20-JAN-15 14:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
6010_METALS_ICP: GW 07 (BIOREM) "As Received"												
Boron 7440-42-8	B	25.9	+/-7.21	15.0	50.0	ug/L	1	HSC	01/30/15	1319	1452100	1
Calcium 7440-70-2		162000	+/-32400	50.0	200	ug/L	1					
Iron 7439-89-6	U	23.7	+/-11.1	30.0	100	ug/L	1					
Magnesium 7439-95-4		29100	+/-5820	110	300	ug/L	1					
Phosphorous 7723-14-0	U	15.4	+/-20.2	60.0	150	ug/L	1					
Potassium 7440-09-7		6640	+/-1330	50.0	150	ug/L	1					
Silicon 7440-21-3		14800	+/-2950	25.0	100	ug/L	1					
Sodium 7440-23-5		54700	+/-10900	100	300	ug/L	1					
Vanadium 7440-62-2	B	1.24	+/-0.415	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5		104	+/-21.3	15.0	50.0	ug/L	1	BAJ	02/16/15	1726	1452102	2
Antimony 7440-36-0	U	0.170	+/-0.335	1.00	5.00	ug/L	1					
Barium 7440-39-3		192	+/-38.5	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.022	+/-0.0668	0.200	2.00	ug/L	1					
Cadmium 7440-43-9	U	0.041	+/-0.0376	0.110	2.00	ug/L	1					
Chromium 7440-47-3	U	0.322	+/-0.670	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.260	+/-0.0618	0.100	4.00	ug/L	1					
Copper	B	1.73	+/-0.366	0.350	8.00	ug/L	1					

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y652
Sample ID: 365553013

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
7440-50-8 Lead	U	0.033	+/-0.167	0.500	2.00	ug/L	1					
7439-92-1 Molybdenum	B	0.652	+/-0.142	0.165	20.0	ug/L	1					
7439-98-7 Nickel	B	1.32	+/-0.312	0.500	2.00	ug/L	1					
7440-02-0 Silver	U	0.009	+/-0.0667	0.200	2.00	ug/L	1					
7440-22-4 Strontium		854	+/-171	2.00	10.0	ug/L	1					
7440-24-6 Thallium	U	0.009	+/-0.150	0.450	2.00	ug/L	1					
7440-28-0 Thorium	U	0.008	+/-0.128	0.383	2.00	ug/L	1					
7440-29-1 Tin	U	0.922	+/-0.381	1.00	5.00	ug/L	1					
7440-31-5 Uranium		4.42	+/-0.884	0.067	0.200	ug/L	1					
7440-61-1 Zinc		13.5	+/-2.95	3.50	10.0	ug/L	1					
7440-66-6 Arsenic	U	-3.32	+/-2.91	8.50	25.0	ug/L	1	SKJ	02/19/15	1958	1458820	3
7440-38-2 Selenium	U	-0.55	+/-2.50	7.50	25.0	ug/L	1					
7782-49-2 Boron	B	32.3	+/-9.29	20.0	75.0	ug/L	1	SKJ	02/20/15	1058	1458820	4
7440-42-8 Manganese		1200	+/-240	5.00	25.0	ug/L	1					
7439-96-5												

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	02/18/15	1741	1458819
SW846 3005A	ICP-MS 3005A PREP	JXM5	01/23/15	0800	1452101
SW846 3005A	SW846 3005A for 6010C	JXM5	01/23/15	0800	1452099

The following Analytical Methods were performed

Method	Description	Analyst Comments

GEL LABORATORIES LLC
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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y652
Sample ID: 365553013

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6020A	
3	SW846 3005A/6020A	
4	SW846 3005A/6020A	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y655
Sample ID: 365553014
Matrix: WATER
Collect Date: 21-JAN-15 12:11
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
6010_METALS_ICP: GW 07 (BIOREM) "As Received"												
Boron 7440-42-8	B	24.7	+/-7.02	15.0	50.0	ug/L	1	HSC	01/30/15	1246	1452100	1
Calcium 7440-70-2		154000	+/-30900	50.0	200	ug/L	1					
Iron 7439-89-6		2650	+/-529	30.0	100	ug/L	1					
Magnesium 7439-95-4		30100	+/-6030	110	300	ug/L	1					
Phosphorous 7723-14-0	B	70.3	+/-24.4	60.0	150	ug/L	1					
Potassium 7440-09-7		5150	+/-1030	50.0	150	ug/L	1					
Silicon 7440-21-3		14100	+/-2820	25.0	100	ug/L	1					
Sodium 7440-23-5		37000	+/-7400	100	300	ug/L	1					
Vanadium 7440-62-2	U	0.0743	+/-0.334	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	7.51	+/-5.22	15.0	50.0	ug/L	1	BAJ	02/16/15	1728	1452102	2
Antimony 7440-36-0	U	0.066	+/-0.334	1.00	5.00	ug/L	1					
Barium 7440-39-3		177	+/-35.4	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.019	+/-0.0668	0.200	2.00	ug/L	1					
Cadmium 7440-43-9	U	0.068	+/-0.0391	0.110	2.00	ug/L	1					
Chromium 7440-47-3	U	0.102	+/-0.667	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	2.11	+/-0.423	0.100	4.00	ug/L	1					
Copper	B	1.26	+/-0.278	0.350	8.00	ug/L	1					

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y655 Project: CPRC0X15007
Sample ID: 365553014 Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP-MS											
6020_METALS_ICPMS: GW 01 "As Received"											
7440-50-8 Lead	U	0.386	+/-0.184	0.500	2.00	ug/L	1				
7439-92-1 Molybdenum	B	3.42	+/-0.686	0.165	20.0	ug/L	1				
7439-98-7 Nickel		2.08	+/-0.448	0.500	2.00	ug/L	1				
7440-02-0 Silver	U	0.004	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium		736	+/-147	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.008	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Thorium	U	0.010	+/-0.128	0.383	2.00	ug/L	1				
7440-29-1 Tin	U	0.186	+/-0.335	1.00	5.00	ug/L	1				
7440-31-5 Uranium		2.04	+/-0.408	0.067	0.200	ug/L	1				
7440-61-1 Zinc	U	0.196	+/-1.17	3.50	10.0	ug/L	1				
7440-66-6 Arsenic	U	-0.451	+/-0.574	1.70	5.00	ug/L	1	SKJ	02/19/15 2004	1458820	3
7440-38-2 Selenium	U	-0.168	+/-0.501	1.50	5.00	ug/L	1				
7782-49-2 Boron		17.8	+/-3.80	4.00	15.0	ug/L	1	SKJ	02/20/15 1059	1458820	4
7440-42-8 Manganese	D	3310	+/-662	10.0	50.0	ug/L	10	SKJ	02/20/15 1101	1458820	5
7439-96-5											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	02/18/15	1741	1458819
SW846 3005A	ICP-MS 3005A PREP	JXM5	01/23/15	0800	1452101
SW846 3005A	SW846 3005A for 6010C	JXM5	01/23/15	0800	1452099

The following Analytical Methods were performed

Method	Description	Analyst Comments

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y655
Sample ID: 365553014

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6020A	
3	SW846 3005A/6020A	
4	SW846 3005A/6020A	
5	SW846 3005A/6020A	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y667
Sample ID: 365553015
Matrix: WATER
Collect Date: 20-JAN-15 13:21
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
6010_METALS_ICP: GW 07 (BIOREM) "As Received"												
Boron 7440-42-8	U	10.1	+/-5.39	15.0	50.0	ug/L	1	HSC	01/30/15	1322	1452100	1
Calcium 7440-70-2		17600	+/-3530	50.0	200	ug/L	1					
Iron 7439-89-6		126	+/-27.1	30.0	100	ug/L	1					
Magnesium 7439-95-4		4120	+/-825	110	300	ug/L	1					
Phosphorous 7723-14-0		3560	+/-713	60.0	150	ug/L	1					
Potassium 7440-09-7		1320	+/-264	50.0	150	ug/L	1					
Silicon 7440-21-3		8320	+/-1660	25.0	100	ug/L	1					
Sodium 7440-23-5		17300	+/-3460	100	300	ug/L	1					
Vanadium 7440-62-2	B	4.48	+/-0.956	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5		93.3	+/-19.3	15.0	50.0	ug/L	1	BAJ	02/16/15	1738	1452102	2
Antimony 7440-36-0	U	0.524	+/-0.349	1.00	5.00	ug/L	1					
Barium 7440-39-3		21.7	+/-4.35	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.007	+/-0.0667	0.200	2.00	ug/L	1					
Cadmium 7440-43-9	U	0.015	+/-0.0368	0.110	2.00	ug/L	1					
Chromium 7440-47-3		36.1	+/-7.24	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.158	+/-0.0459	0.100	4.00	ug/L	1					
Copper	B	4.24	+/-0.857	0.350	8.00	ug/L	1					

GEL LABORATORIES LLC
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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y667
Sample ID: 365553015

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
7440-50-8 Lead	U	0.259	+/-0.175	0.500	2.00	ug/L	1					
7439-92-1 Molybdenum	B	1.24	+/-0.254	0.165	20.0	ug/L	1					
7439-98-7 Nickel	B	1.43	+/-0.331	0.500	2.00	ug/L	1					
7440-02-0 Silver	U	0.014	+/-0.0667	0.200	2.00	ug/L	1					
7440-22-4 Strontium		71.6	+/-14.3	2.00	10.0	ug/L	1					
7440-24-6 Thallium	U	0.064	+/-0.151	0.450	2.00	ug/L	1					
7440-28-0 Thorium	U	0.089	+/-0.129	0.383	2.00	ug/L	1					
7440-29-1 Tin	U	0.214	+/-0.336	1.00	5.00	ug/L	1					
7440-31-5 Uranium	B	0.117	+/-0.0323	0.067	0.200	ug/L	1					
7440-61-1 Zinc	B	3.91	+/-1.40	3.50	10.0	ug/L	1					
7440-66-6 Arsenic	U	0.745	+/-2.84	8.50	25.0	ug/L	1	SKJ	02/19/15	2011	1458820	3
7440-38-2 Selenium	U	0.480	+/-2.50	7.50	25.0	ug/L	1					
7782-49-2 Boron	U	13.6	+/-7.20	20.0	75.0	ug/L	1	SKJ	02/20/15	1104	1458820	4
7440-42-8 Manganese		41.0	+/-8.37	5.00	25.0	ug/L	1					
7439-96-5												

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	02/18/15	1741	1458819
SW846 3005A	ICP-MS 3005A PREP	JXM5	01/23/15	0800	1452101
SW846 3005A	SW846 3005A for 6010C	JXM5	01/23/15	0800	1452099

The following Analytical Methods were performed

Method	Description	Analyst Comments

GEL LABORATORIES LLC
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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y667
Sample ID: 365553015

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6020A	
3	SW846 3005A/6020A	
4	SW846 3005A/6020A	

GEL LABORATORIES LLC
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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y670
Sample ID: 365553016
Matrix: WATER
Collect Date: 21-JAN-15 08:19
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
6010_METALS_ICP: GW 07 (BIOREM) "As Received"												
Boron 7440-42-8	U	10.8	+/-5.44	15.0	50.0	ug/L	1	HSC	01/30/15	1325	1452100	1
Calcium 7440-70-2		14100	+/-2810	50.0	200	ug/L	1					
Iron 7439-89-6		312	+/-63.3	30.0	100	ug/L	1					
Magnesium 7439-95-4		2870	+/-576	110	300	ug/L	1					
Phosphorous 7723-14-0	U	49.5	+/-22.3	60.0	150	ug/L	1					
Potassium 7440-09-7		1820	+/-364	50.0	150	ug/L	1					
Silicon 7440-21-3		7540	+/-1510	25.0	100	ug/L	1					
Sodium 7440-23-5		20000	+/-4010	100	300	ug/L	1					
Vanadium 7440-62-2	B	3.64	+/-0.800	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5		295	+/-59.2	15.0	50.0	ug/L	1	BAJ	02/16/15	1740	1452102	2
Antimony 7440-36-0	U	0.217	+/-0.336	1.00	5.00	ug/L	1					
Barium 7440-39-3		13.4	+/-2.69	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.026	+/-0.0669	0.200	2.00	ug/L	1					
Cadmium 7440-43-9	U	0.012	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		4.60	+/-1.14	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.153	+/-0.0452	0.100	4.00	ug/L	1					
Copper	B	0.899	+/-0.214	0.350	8.00	ug/L	1					

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y670 Project: CPRC0X15007
Sample ID: 365553016 Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP-MS											
6020_METALS_ICPMS: GW 01 "As Received"											
7440-50-8 Lead	U	0.136	+/-0.169	0.500	2.00	ug/L	1				
7439-92-1 Molybdenum	B	1.51	+/-0.307	0.165	20.0	ug/L	1				
7439-98-7 Nickel	B	0.641	+/-0.210	0.500	2.00	ug/L	1				
7440-02-0 Silver	U	0.005	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium		68.9	+/-13.8	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.019	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Thorium	U	0.068	+/-0.128	0.383	2.00	ug/L	1				
7440-29-1 Tin	U	0.156	+/-0.335	1.00	5.00	ug/L	1				
7440-31-5 Uranium		0.561	+/-0.114	0.067	0.200	ug/L	1				
7440-61-1 Zinc	U	1.60	+/-1.21	3.50	10.0	ug/L	1				
7440-66-6 Arsenic	U	0.324	+/-0.570	1.70	5.00	ug/L	1	SKJ	02/19/15 2031	1458820	3
7440-38-2 Selenium	U	0.210	+/-0.502	1.50	5.00	ug/L	1				
7782-49-2 Boron	B	9.59	+/-2.34	4.00	15.0	ug/L	1	SKJ	02/20/15 1105	1458820	4
7440-42-8 Manganese		10.8	+/-2.18	1.00	5.00	ug/L	1				
7439-96-5											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	02/18/15	1741	1458819
SW846 3005A	ICP-MS 3005A PREP	JXM5	01/23/15	0800	1452101
SW846 3005A	SW846 3005A for 6010C	JXM5	01/23/15	0800	1452099

The following Analytical Methods were performed

Method	Description	Analyst Comments

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 20, 2015

Client Sample ID: B2Y670
Sample ID: 365553016

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6020A	
3	SW846 3005A/6020A	
4	SW846 3005A/6020A	

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: February 20, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **365553**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1452102										
QC1203249384 LCS										
Aluminum	2000			2200	ug/L		110	(80%-120%)	BAJ	02/16/15 17:14
Antimony	50.0			48.2	ug/L		96.4	(80%-120%)		
Barium	50.0			50.1	ug/L		100	(80%-120%)		
Beryllium	50.0			59.4	ug/L		119	(80%-120%)		
Cadmium	50.0			49.8	ug/L		99.6	(80%-120%)		
Chromium	50.0			52.1	ug/L		104	(80%-120%)		
Cobalt	50.0			50.4	ug/L		101	(80%-120%)		
Copper	50.0			51.9	ug/L		104	(80%-120%)		
Lead	50.0			49.0	ug/L		97.9	(80%-120%)		
Molybdenum	50.0			50.5	ug/L		101	(80%-120%)		
Nickel	50.0			51.5	ug/L		103	(80%-120%)		
Silver	50.0			53.2	ug/L		106	(80%-120%)		
Strontium	50.0			51.9	ug/L		104	(80%-120%)		
Thallium	50.0			48.8	ug/L		97.7	(80%-120%)		
Thorium	50.0			49.0	ug/L		97.9	(80%-120%)		
Tin	50.0			51.3	ug/L		103	(80%-120%)		
Uranium	50.0			51.1	ug/L		102	(80%-120%)		
Zinc	50.0			47.9	ug/L		95.7	(80%-120%)		
QC1203249383 MB										
Aluminum			U	ND	ug/L					02/16/15 17:12

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS												
Batch 1452102												
Antimony				U	ND	ug/L						
Barium				U	ND	ug/L				BAJ	02/16/15	17:12
Beryllium				U	ND	ug/L						
Cadmium				U	ND	ug/L						
Chromium				U	ND	ug/L						
Cobalt				U	ND	ug/L						
Copper				U	ND	ug/L						
Lead				U	ND	ug/L						
Molybdenum				U	ND	ug/L						
Nickel				U	ND	ug/L						
Silver				U	ND	ug/L						
Strontium				U	ND	ug/L						
Thallium				U	ND	ug/L						
Thorium				U	ND	ug/L						
Tin				U	ND	ug/L						
Uranium				U	ND	ug/L						
Zinc				U	ND	ug/L						
QC1203249385 365553016 MS												
Aluminum	2000		295		2410	ug/L		106	(75%-125%)		02/16/15	17:43
Antimony	50.0	U	ND		48.3	ug/L		96.1	(75%-125%)			
Barium	50.0		13.4		61.5	ug/L		96.2	(75%-125%)			
Beryllium	50.0	U	ND		61.0	ug/L		122	(75%-125%)			
Cadmium	50.0	U	ND		49.3	ug/L		98.5	(75%-125%)			

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1452102											
Chromium	50.0		4.60		58.1	ug/L		107	(75%-125%)	BAJ	02/16/15 17:43
Cobalt	50.0	B	0.153		50.2	ug/L		100	(75%-125%)		
Copper	50.0	B	0.899		50.7	ug/L		99.6	(75%-125%)		
Lead	50.0	U	ND		49.3	ug/L		98.3	(75%-125%)		
Molybdenum	50.0	B	1.51		51.7	ug/L		100	(75%-125%)		
Nickel	50.0	B	0.641		50.5	ug/L		99.7	(75%-125%)		
Silver	50.0	U	ND		50.8	ug/L		102	(75%-125%)		
Strontium	50.0		68.9		118	ug/L		98.4	(75%-125%)		
Thallium	50.0	U	ND		50.0	ug/L		100	(75%-125%)		
Thorium	50.0	U	ND		49.9	ug/L		99.6	(75%-125%)		
Tin	50.0	U	ND		50.6	ug/L		101	(75%-125%)		
Uranium	50.0		0.561		51.9	ug/L		103	(75%-125%)		
Zinc	50.0	U	ND		50.8	ug/L		98.3	(75%-125%)		
QC1203249386 365553016 MSD											
Aluminum	2000		295		2450	ug/L	1.47	108	(0%-20%)		02/16/15 17:45
Antimony	50.0	U	ND		49.3	ug/L	2.14	98.2	(0%-20%)		
Barium	50.0		13.4		63.2	ug/L	2.67	99.6	(0%-20%)		
Beryllium	50.0	U	ND		58.9	ug/L	3.61	118	(0%-20%)		
Cadmium	50.0	U	ND		49.8	ug/L	1.02	99.6	(0%-20%)		
Chromium	50.0		4.60		55.4	ug/L	4.88	102	(0%-20%)		
Cobalt	50.0	B	0.153		49.5	ug/L	1.51	98.6	(0%-20%)		
Copper	50.0	B	0.899		49.4	ug/L	2.52	97.1	(0%-20%)		

GEL LABORATORIES LLC
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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1452102											
Lead	50.0	U	ND		48.8	ug/L	1.01	97.3	(0%-20%)	BAJ	02/16/15 17:45
Molybdenum	50.0	B	1.51		52.6	ug/L	1.61	102	(0%-20%)		
Nickel	50.0	B	0.641		49.3	ug/L	2.41	97.3	(0%-20%)		
Silver	50.0	U	ND		51.5	ug/L	1.21	103	(0%-20%)		
Strontium	50.0		68.9		121	ug/L	2.27	104	(0%-20%)		
Thallium	50.0	U	ND		48.0	ug/L	4.10	96	(0%-20%)		
Thorium	50.0	U	ND		49.0	ug/L	1.79	97.8	(0%-20%)		
Tin	50.0	U	ND		51.2	ug/L	1.25	102	(0%-20%)		
Uranium	50.0		0.561		50.5	ug/L	2.74	99.9	(0%-20%)		
Zinc	50.0	U	ND		47.8	ug/L	5.94	92.5	(0%-20%)		
QC1203249387 365553016 SDILT											
Aluminum			295	D	59.6	ug/L	1.01		(0%-10%)		02/16/15 17:50
Antimony		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Barium			13.4	D	2.80	ug/L	4.53		(0%-10%)		
Beryllium		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Cadmium		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Chromium			4.60	DU	ND	ug/L	N/A		(0%-10%)		
Cobalt		B	0.153	DU	ND	ug/L	N/A		(0%-10%)		
Copper		B	0.899	DU	ND	ug/L	N/A		(0%-10%)		
Lead		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Molybdenum		B	1.51	D	0.318	ug/L	5.44		(0%-10%)		
Nickel		B	0.641	DU	ND	ug/L	N/A		(0%-10%)		

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1452102											
Silver		U	ND	DU	ND	ug/L	N/A		(0%-10%)	BAJ	02/16/15 17:50
Strontium			68.9	D	13.9	ug/L	1.08		(0%-10%)		
Thallium		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Thorium		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Tin		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Uranium			0.561	D	0.122	ug/L	8.73		(0%-10%)		
Zinc		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Batch 1458820											
QC1203267571 LCS											
Arsenic	50.0				43.6	ug/L		87.3	(80%-120%)	SKJ	02/19/15 18:51
Boron	100				92.6	ug/L		92.6	(80%-120%)		02/20/15 10:50
Manganese	50.0				53.8	ug/L		108	(80%-120%)		
Selenium	50.0				47.4	ug/L		94.9	(80%-120%)		02/19/15 18:51
QC1203267570 MB											
Arsenic				U	ND	ug/L					02/19/15 18:44
Boron				U	ND	ug/L					02/20/15 10:48
Manganese				U	ND	ug/L					
Selenium				U	ND	ug/L					02/19/15 18:44
QC1203267572 365553016 MS											
Arsenic	50.0	U	ND		45.7	ug/L		90.8	(75%-125%)		02/19/15 20:37
Boron	100	B	9.59		105	ug/L		95.2	(75%-125%)		02/20/15 11:07
Manganese	50.0		10.8		63.6	ug/L		106	(75%-125%)		
Selenium	50.0	U	ND		47.2	ug/L		93.9	(75%-125%)		02/19/15 20:37
QC1203267573 365553016 MSD											

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1458820											
Arsenic	50.0	U	ND		45.3	ug/L	1.04	89.9	(0%-20%)		02/19/15 20:44
Boron	100	B	9.59		106	ug/L	1.22	96.5	(0%-20%)	SKJ	02/20/15 11:08
Manganese	50.0		10.8		62.6	ug/L	1.51	104	(0%-20%)		
Selenium	50.0	U	ND		47.2	ug/L	0.0212	94	(0%-20%)		02/19/15 20:44
QC1203267574 365553016 SDILT											
Arsenic		U	ND	DU	ND	ug/L	N/A		(0%-10%)		02/19/15 20:57
Boron		B	9.59	D	4.05	ug/L	111		(0%-10%)		02/20/15 11:10
Manganese			10.8	D	2.40	ug/L	11.3		(0%-10%)		
Selenium		U	ND	DU	ND	ug/L	N/A		(0%-10%)		02/19/15 20:57
Metals Analysis-ICP											
Batch 1452100											
QC1203249379 LCS											
Boron	500				494	ug/L		98.9	(80%-120%)	HSC	01/30/15 12:43
Calcium	5000				5070	ug/L		101	(80%-120%)		
Iron	5000				5230	ug/L		105	(80%-120%)		
Magnesium	5000				5190	ug/L		104	(80%-120%)		
Phosphorous	500				455	ug/L		91	(80%-120%)		
Potassium	5000				5230	ug/L		105	(80%-120%)		
Silicon	5000				4950	ug/L		99	(80%-120%)		
Sodium	5000				4950	ug/L		98.9	(80%-120%)		
Vanadium	500				525	ug/L		105	(80%-120%)		
QC1203249378 MB											
Boron				U	ND	ug/L					01/30/15 12:40
Calcium				U	ND	ug/L					
Iron				U	ND	ug/L					

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1452100											
Magnesium				U	ND	ug/L					
Phosphorous				U	ND	ug/L				HSC	01/30/15 12:40
Potassium				U	ND	ug/L					
Silicon				U	ND	ug/L					
Sodium				U	ND	ug/L					
Vanadium				U	ND	ug/L					
QC1203249380 365553014 MS											
Boron	500	B	24.7		535	ug/L		102	(75%-125%)		01/30/15 12:49
Calcium	5000		154000		165000	ug/L		N/A	(75%-125%)		
Iron	5000		2650		7870	ug/L		104	(75%-125%)		
Magnesium	5000		30100		36000	ug/L		N/A	(75%-125%)		
Phosphorous	500	B	70.3		565	ug/L		98.9	(75%-125%)		
Potassium	5000		5150		10500	ug/L		107	(75%-125%)		
Silicon	5000		14100		19800	ug/L		113	(75%-125%)		
Sodium	5000		37000		42900	ug/L		N/A	(75%-125%)		
Vanadium	500	U	ND		531	ug/L		106	(75%-125%)		
QC1203249381 365553014 MSD											
Boron	500	B	24.7		544	ug/L	1.67	104	(0%-20%)		01/30/15 12:53
Calcium	5000		154000		166000	ug/L	0.907	N/A	(0%-20%)		
Iron	5000		2650		8000	ug/L	1.71	107	(0%-20%)		
Magnesium	5000		30100		36500	ug/L	1.38	N/A	(0%-20%)		
Phosphorous	500	B	70.3		576	ug/L	1.90	101	(0%-20%)		
Potassium	5000		5150		10700	ug/L	1.74	111	(0%-20%)		
Silicon	5000		14100		20000	ug/L	1.22	118	(0%-20%)		

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1452100											
Sodium	5000		37000		43700	ug/L	1.75	N/A	(0%-20%)	HSC	01/30/15 12:53
Vanadium	500	U	ND		537	ug/L	1.09	107	(0%-20%)		
QC1203249382 365553014 SDILT											
Boron		B	24.7	DU	ND	ug/L	N/A		(0%-10%)		01/30/15 12:56
Calcium			154000	D	30100	ug/L	2.46		(0%-10%)		
Iron			2650	D	518	ug/L	2.02		(0%-10%)		
Magnesium			30100	D	5940	ug/L	1.49		(0%-10%)		
Phosphorous		B	70.3	DU	ND	ug/L	N/A		(0%-10%)		
Potassium			5150	D	962	ug/L	6.56		(0%-10%)		
Silicon			14100	D	2790	ug/L	1.25		(0%-10%)		
Sodium			37000	D	7060	ug/L	4.53		(0%-10%)		
Vanadium		U	ND	DU	ND	ug/L	N/A		(0%-10%)		

Notes:

The Qualifiers in this report are defined as follows:

- * Duplicate analysis not within control limits
- + Correlation coefficient for Method of Standard Additions (MSA) is < 0.995
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- E Reported value is estimated due to interferences. See comment in narrative.
- M Duplicate precision not met.
- N Spike Sample recovery is outside control limits.
- S Reported value determined by the Method of Standard Additions (MSA)
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- W Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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QC Summary

Workorder: 365553

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time

Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL365553
Work Order #: 365553

Method/Analysis Information

Product:	**Ion Chromatography**		
Analytical Batch:	1452140	**Method:**	9056_ANIONS_IC: COMMON + GW 02

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 9056A:

Sample ID	Client ID
365553001	B2Y641
365553002	B2Y644
365553003	B2Y647
365553004	B2Y650
365553005	B2Y653
365553006	B2Y656
365553007	B2Y668
365553008	B2Y671
1203249515	Method Blank (MB)
1203249516	Laboratory Control Sample (LCS)
1203249517	365553008(B2Y671) Sample Duplicate (DUP)
1203249518	365553008(B2Y671) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-086 REV# 23.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Ion Chromatography analysis was performed on a Dionex ICS-3000 Ion Chromatograph.

Initial Calibration
All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
Sample365553008 (B2Y671) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The spike recovery falls outside of the GEL acceptance limits but within the client specified limits. 1203249518 (B2Y671PS).

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
Sample 365553007 (B2Y668) was initially analyzed within holding; however, the holding time had expired prior to reanalysis of diluted sample.

Sample Dilutions
Samples 365553001 (B2Y641), 365553002 (B2Y644), 365553003 (B2Y647), 365553004 (B2Y650), 365553005 (B2Y653), 365553006 (B2Y656) and 365553007 (B2Y668) were diluted because target analyte concentrations exceeded the calibration range. The following samples in this sample group were diluted due to matrix interference. 365553001 (B2Y641), 365553002 (B2Y644), 365553003 (B2Y647), 365553004 (B2Y650), 365553005 (B2Y653) and 365553006 (B2Y656). Samples 365553001 (B2Y641), 365553002 (B2Y644), 365553003 (B2Y647), 365553004 (B2Y650), 365553005 (B2Y653) and 365553006 (B2Y656) were diluted based on historical data.

Analyte	365553						
	001	**002**	**003**	**004**	**005**	**006**	**007**
Several	20X 2X 10X 1X	2X 10X 1X	20X 2X 10X 1X	20X 2X 10X 1X	2X 10X 1X	2X 10X 1X	2X 1X

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
The following DER was generated for this SDG: 1376462. 365553005 (B2Y653) and 365553007 (B2Y668).

Manual Integrations
Samples 1203249517 (B2Y671DUP), 1203249518 (B2Y671PS), 365553001 (B2Y641), 365553002 (B2Y644), 365553003 (B2Y647), 365553004 (B2Y650), 365553005 (B2Y653), 365553006 (B2Y656), 365553007 (B2Y668) and 365553008 (B2Y671) were manually integrated to correctly position the baseline as set in the calibration standards.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**n-Hexane Extractable Material**		
Analytical Batch:	1456239	**Method:**	EPA 1664A n-Hexane Extractable Material (Oil and Grease)

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 1664A/1664B:

Sample ID	Client ID
365553009	B2Y640
365553010	B2Y643
365553011	B2Y646
365553012	B2Y649
365553013	B2Y652
365553014	B2Y655
365553015	B2Y667
365553016	B2Y670
1203260830	Method Blank (MB)
1203260831	Laboratory Control Sample (LCS)
1203261023	365553014(B2Y655) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-094 REV# 13.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Oil & Grease analysis was performed on a Sartorius Balance BAL745. Oil and Grease lab

Initial Calibration
All initial calibration requirements have been met for this SDG.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
Sample365553014 (B2Y655) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recovery for this sample set was within the required acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Preservation/Integrity
Samples 365553009 (B2Y640), 365553010 (B2Y643), 365553011 (B2Y646), 365553012 (B2Y649), 365553013 (B2Y652), 365553014 (B2Y655), 365553015 (B2Y667) and 365553016 (B2Y670) were not preserved to a pH <2. The pH was adjusted by the analyst prior to analysis and the Project Manager was notified.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Sample Aliquot
Per EPA methodology, the entire sample was used for the analysis.

Miscellaneous Information

Data Exception (DER) Documentation
The following DER was generated for this SDG: 1381065. 365553009 (B2Y640), 365553010 (B2Y643), 365553011 (B2Y646), 365553012 (B2Y649), 365553013 (B2Y652), 365553014 (B2Y655), 365553015 (B2Y667) and 365553016 (B2Y670).

Additional Comments
The client provided volume less than 1 L for the oil and grease analysis. All of the volume must be used in the extraction process; since the provided volume is less than 1 L, the resulting reporting and detection limits are elevated. 365553012 (B2Y649).

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are

present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Alkalinity**		
Analytical Batch:	1453934 and 1454936	**Method:**	2320_ALKALINITY: COMMON (Alkalinity only)

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SM 2320B:

Sample ID	Client ID
365553009	B2Y640
365553010	B2Y643
365553011	B2Y646
365553012	B2Y649
365553013	B2Y652
365553014	B2Y655
365553015	B2Y667
365553016	B2Y670
1203254245	Method Blank (MB)
1203257029	Method Blank (MB)
1203254247	Laboratory Control Sample (LCS)
1203257031	Laboratory Control Sample (LCS)
1203254252	365484001(B30112) Sample Duplicate (DUP)
1203257033	365929002(B2YYW9) Sample Duplicate (DUP)
1203254254	365484001(B30112) Matrix Spike (MS)
1203257035	365929002(B2YYW9) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-033 REV# 11.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Titration and Ion analysis was performed on a manually operated buret.

Initial Standardization
The titrant was properly standardized

Quality Control (QC) Information

Method Blank (MB) Statement
The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Designation
Samples365484001 (B30112)- Batch 1453934 and 365929002 (B2YYW9)- Batch 1454936 were selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recoveries for this sample set were within the required acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
50mL of sample were used due to limited quantity. 365553013 (B2Y652) and 365553015 (B2Y667)- Batch 1453934. 50mL of sample was used due to limited quantity. 1203257033 (Non SDG 365929002DUP), 1203257035 (Non SDG 365929002MS), 365553009 (B2Y640), 365553010 (B2Y643), 365553011 (B2Y646) and 365553012 (B2Y649)- Batch 1454936.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will

always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL365553 GEL Work Order: 365553

The Qualifiers in this report are defined as follows:

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

D Results are reported from a diluted aliquot of sample.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Thomas Lewis**

Date: 18 FEB 2015 **Title: Data Validator**

Sample Data Summary

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y641
Sample ID: 365553001
Matrix: WATER
Collect Date: 21-JAN-15 09:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON + GW 02 "As Received"											
Fluoride 16984-48-8	B	102	+/-11.5	33.0	500	ug/L	1	RXB5 01/22/15	1347	1452140	1
Nitrite-N 14797-65-0	B	88.2	+/-13.0	38.0	250	ug/L	1				
Phosphorus in phosphate PO4-P	B	75.2	+/-22.5	67.0	500	ug/L	1				
Chloride 16887-00-6	D	51400	+/-1730	670	2000	ug/L	10	RXB5 01/22/15	1927	1452140	2
Nitrate-N 14797-55-8	D	7260	+/-266	330	1000	ug/L	10				
Bromide 24959-67-9	D	358	+/-46.2	134	400	ug/L	2	RXB5 01/23/15	1506	1452140	3
Sulfate 14808-79-8	D	211000	+/-7080	2660	8000	ug/L	20	RXB5 01/23/15	1537	1452140	4

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	
3	SW846 9056A	
4	SW846 9056A	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y644
Sample ID: 365553002
Matrix: WATER
Collect Date: 21-JAN-15 09:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON + GW 02 "As Received"											
Fluoride 16984-48-8	B	81.1	+/-11.3	33.0	500	ug/L	1	RXB5 01/22/15	1417	1452140	1
Nitrite-N 14797-65-0		355	+/-17.3	38.0	250	ug/L	1				
Phosphorus in phosphate PO4-P	U	62.7	+/-22.4	67.0	500	ug/L	1				
Chloride 16887-00-6	D	40600	+/-1370	670	2000	ug/L	10	RXB5 01/22/15	1958	1452140	2
Nitrate-N 14797-55-8	D	8350	+/-299	330	1000	ug/L	10				
Sulfate 14808-79-8	D	167000	+/-5580	1330	4000	ug/L	10				
Bromide 24959-67-9	D	323	+/-45.9	134	400	ug/L	2	RXB5 01/23/15	1608	1452140	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	
3	SW846 9056A	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y647
Sample ID: 365553003
Matrix: WATER
Collect Date: 21-JAN-15 10:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON + GW 02 "As Received"											
Fluoride 16984-48-8	B	62.2	+/-11.2	33.0	500	ug/L	1	RXB5 01/22/15	1448	1452140	1
Nitrate-N 14797-55-8	U	0.00	+/-11.0	33.0	250	ug/L	1				
Nitrite-N 14797-65-0	U	37.4	+/-12.7	38.0	250	ug/L	1				
Phosphorus in phosphate PO4-P	U	47.0	+/-22.4	67.0	500	ug/L	1				
Chloride 16887-00-6	D	28000	+/-959	670	2000	ug/L	10	RXB5 01/22/15	2029	1452140	2
Bromide 24959-67-9	D	261	+/-45.5	134	400	ug/L	2	RXB5 01/23/15	1639	1452140	3
Sulfate 14808-79-8	D	217000	+/-7270	2660	8000	ug/L	20	RXB5 01/23/15	1710	1452140	4

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	
3	SW846 9056A	
4	SW846 9056A	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y650
Sample ID: 365553004
Matrix: WATER
Collect Date: 21-JAN-15 11:31
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON + GW 02 "As Received"											
Fluoride 16984-48-8	B	87.9	+/-11.4	33.0	500	ug/L	1	RXB5 01/22/15	1519	1452140	1
Nitrate-N 14797-55-8	U	0.00	+/-11.0	33.0	250	ug/L	1				
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1				
Phosphorus in phosphate PO4-P	U	0.00	+/-22.3	67.0	500	ug/L	1				
Chloride 16887-00-6	D	60300	+/-2020	670	2000	ug/L	10	RXB5 01/22/15	2100	1452140	2
Bromide 24959-67-9	D	347	+/-46.1	134	400	ug/L	2	RXB5 01/23/15	1741	1452140	3
Sulfate 14808-79-8	D	219000	+/-7370	2660	8000	ug/L	20	RXB5 01/23/15	1812	1452140	4

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	
3	SW846 9056A	
4	SW846 9056A	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y653
Sample ID: 365553005
Matrix: WATER
Collect Date: 20-JAN-15 14:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON + GW 02 "As Received"											
Fluoride 16984-48-8	B	115	+/-11.6	33.0	500	ug/L	1	RXB5 01/22/15	1550	1452140	1
Nitrite-N 14797-65-0	B	44.2	+/-12.8	38.0	250	ug/L	1				
Phosphorus in phosphate PO4-P	U	0.00	+/-22.3	67.0	500	ug/L	1				
Chloride 16887-00-6	D	59300	+/-1990	670	2000	ug/L	10	RXB5 01/22/15	2131	1452140	2
Nitrate-N 14797-55-8	DX	1660	+/-123	330	1000	ug/L	10				
Sulfate 14808-79-8	D	157000	+/-5250	1330	4000	ug/L	10				
Bromide 24959-67-9	D	264	+/-45.5	134	400	ug/L	2	RXB5 01/23/15	1843	1452140	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	
3	SW846 9056A	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y656
Sample ID: 365553006
Matrix: WATER
Collect Date: 21-JAN-15 12:11
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON + GW 02 "As Received"											
Fluoride 16984-48-8	B	78.1	+/-11.3	33.0	500	ug/L	1	RXB5 01/22/15	1621	1452140	1
Nitrite-N 14797-65-0	B	52.4	+/-12.8	38.0	250	ug/L	1				
Phosphorus in phosphate PO4-P	U	0.00	+/-22.3	67.0	500	ug/L	1				
Chloride 16887-00-6	D	30400	+/-1040	670	2000	ug/L	10	RXB5 01/22/15	2202	1452140	2
Sulfate 14808-79-8	D	106000	+/-3550	1330	4000	ug/L	10				
Bromide 24959-67-9	D	263	+/-45.5	134	400	ug/L	2	RXB5 01/23/15	1435	1452140	3
Nitrate-N 14797-55-8	BD	94.2	+/-22.2	66.0	250	ug/L	2				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	
3	SW846 9056A	

GEL LABORATORIES LLC
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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y668
Sample ID: 365553007
Matrix: WATER
Collect Date: 20-JAN-15 13:21
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON + GW 02 "As Received"											
Bromide 24959-67-9	U	0.00	+/-22.3	67.0	250	ug/L	1	RXB5 01/22/15	1314	1452140	1
Chloride 16887-00-6		1810	+/-64.4	67.0	200	ug/L	1				
Fluoride 16984-48-8	B	51.2	+/-11.1	33.0	500	ug/L	1				
Nitrate-N 14797-55-8		723	+/-26.5	33.0	250	ug/L	1				
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1				
Sulfate 14808-79-8		11600	+/-390	133	500	ug/L	1				
Phosphorus in phosphate PO4-P	DX	3610	+/-128	134	500	ug/L	2	RXB5 01/23/15	1914	1452140	2

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y671
Sample ID: 365553008
Matrix: WATER
Collect Date: 21-JAN-15 08:19
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON + GW 02 "As Received"											
Bromide 24959-67-9	U	0.00	+/-22.3	67.0	250	ug/L	1	RXB5 01/22/15	1754	1452140	1
Chloride 16887-00-6		2700	+/-92.7	67.0	200	ug/L	1				
Fluoride 16984-48-8	B	175	+/-12.4	33.0	500	ug/L	1				
Nitrate-N 14797-55-8		760	+/-27.6	33.0	250	ug/L	1				
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1				
Phosphorus in phosphate PO4-P	U	52.2	+/-22.4	67.0	500	ug/L	1				
Sulfate 14808-79-8		14000	+/-469	133	500	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	

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Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y640
Sample ID: 365553009
Matrix: WATER
Collect Date: 21-JAN-15 09:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Oil & Grease Analysis											
EPA 1664A n-Hexane Extractable Material (Oil and Grease) "As Received"											
Oil and Grease	B	1.76	1.37	4.90	mg/L		JXT1	02/09/15	0753	1456239	1
Titration and Ion Analysis											
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"											
Alkalinity, Total as CaCO3 ALKALINITY		268000	1450	2000	ug/L		PXO1	02/04/15	1048	1454936	2

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 1664A/1664B	
2	SM 2320B	

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Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y643
Sample ID: 365553010
Matrix: WATER
Collect Date: 21-JAN-15 09:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Oil & Grease Analysis											
EPA 1664A n-Hexane Extractable Material (Oil and Grease) "As Received"											
Oil and Grease	U	0.495	1.39	4.95	mg/L		JXT1	02/09/15	0753	1456239	1
Titration and Ion Analysis											
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"											
Alkalinity, Total as CaCO3 ALKALINITY		267000	1450	2000	ug/L		PXO1	02/04/15	1052	1454936	2

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 1664A/1664B	
2	SM 2320B	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y646
Sample ID: 365553011
Matrix: WATER
Collect Date: 21-JAN-15 10:40
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Oil & Grease Analysis											
EPA 1664A n-Hexane Extractable Material (Oil and Grease) "As Received"											
Oil and Grease	B	1.95	1.37	4.88	mg/L		JXT1	02/09/15	0753	1456239	1
Titration and Ion Analysis											
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"											
Alkalinity, Total as CaCO3 ALKALINITY		391000	1450	2000	ug/L		PXO1	02/04/15	1056	1454936	2

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 1664A/1664B	
2	SM 2320B	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y649
Sample ID: 365553012
Matrix: WATER
Collect Date: 21-JAN-15 11:31
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Oil & Grease Analysis											
EPA 1664A n-Hexane Extractable Material (Oil and Grease) "As Received"											
Oil and Grease	B	1.63	1.43	5.10	mg/L		JXT1	02/09/15	0753	1456239	1
Titration and Ion Analysis											
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"											
Alkalinity, Total as CaCO3 ALKALINITY		476000	1450	2000	ug/L		PXO1	02/04/15	1059	1454936	2

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 1664A/1664B	
2	SM 2320B	

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PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y652
Sample ID: 365553013
Matrix: WATER
Collect Date: 20-JAN-15 14:03
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Oil & Grease Analysis											
EPA 1664A n-Hexane Extractable Material (Oil and Grease) "As Received"											
Oil and Grease	U	1.07	1.36	4.85	mg/L		JXT1	02/09/15	0753	1456239	1
Titration and Ion Analysis											
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"											
Alkalinity, Total as CaCO3 ALKALINITY		370000	1450	2000	ug/L		PXO1	01/31/15	2003	1453934	2

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 1664A/1664B	
2	SM 2320B	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y655
Sample ID: 365553014
Matrix: WATER
Collect Date: 21-JAN-15 12:11
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Oil & Grease Analysis											
EPA 1664A n-Hexane Extractable Material (Oil and Grease) "As Received"											
Oil and Grease	U	0.766	1.34	4.78	mg/L		JXT1	02/09/15	0753	1456239	1
Titration and Ion Analysis											
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"											
Alkalinity, Total as CaCO3 ALKALINITY		419000	725	1000	ug/L		PXO1	02/04/15	1104	1454936	2

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 1664A/1664B	
2	SM 2320B	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y667
Sample ID: 365553015
Matrix: WATER
Collect Date: 20-JAN-15 13:21
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Oil & Grease Analysis											
EPA 1664A n-Hexane Extractable Material (Oil and Grease) "As Received"											
Oil and Grease	B	1.90	1.33	4.76	mg/L		JXT1	02/09/15	0753	1456239	1
Titration and Ion Analysis											
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"											
Alkalinity, Total as CaCO3 ALKALINITY		71900	1450	2000	ug/L		PXO1	01/31/15	2007	1453934	2

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 1664A/1664B	
2	SM 2320B	

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Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-007**

Report Date: February 18, 2015

Client Sample ID: B2Y670
Sample ID: 365553016
Matrix: WATER
Collect Date: 21-JAN-15 08:19
Receive Date: 22-JAN-15
Collector: Client

Project: CPRC0X15007
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Oil & Grease Analysis											
EPA 1664A n-Hexane Extractable Material (Oil and Grease) "As Received"											
Oil and Grease	U	0.577	1.35	4.81	mg/L		JXT1	02/09/15	0753	1456239	1
Titration and Ion Analysis											
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"											
Alkalinity, Total as CaCO3 ALKALINITY		65100	725	1000	ug/L		PXO1	02/04/15	1108	1454936	2

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 1664A/1664B	
2	SM 2320B	

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: February 18, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **365553**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 1452140										
QC1203249517 365553008 DUP										
Bromide	U	67.0	U	67.0	ug/L	N/A			RXB5	01/22/15 18:25
Chloride		2700		2700	ug/L	0.111		(0%-20%)		
Fluoride	B	175	B	172	ug/L	1.62 ^		(+/-500)		
Nitrate-N		760		762	ug/L	0.210 ^		(+/-250)		
Nitrite-N	U	38.0	U	38.0	ug/L	N/A				
Phosphorus in phosphate	U	67.0	U	67.0	ug/L	N/A				
Sulfate		14000		14000	ug/L	0.156		(0%-20%)		
QC1203249516 LCS										
Bromide	1250			1260	ug/L		101	(90%-110%)		01/23/15 00:04
Chloride	5000			4950	ug/L		99.1	(90%-110%)		
Fluoride	2500			2500	ug/L		100	(90%-110%)		
Nitrate-N	2500			2530	ug/L		101	(90%-110%)		
Nitrite-N	2500			2540	ug/L		102	(90%-110%)		
Phosphorus in phosphate	1250			1280	ug/L		103	(90%-110%)		
Sulfate	10000			10300	ug/L		103	(90%-110%)		
QC1203249515 MB										
Bromide			U	67.0	ug/L					01/22/15 23:34
Chloride			U	67.0	ug/L					
Fluoride			U	33.0	ug/L					
Nitrate-N			U	33.0	ug/L					
Nitrite-N			U	38.0	ug/L					

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QC Summary

Workorder: 365553

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1452140											
Phosphorus in phosphate				U	67.0	ug/L				RXB5	01/22/15 23:34
Sulfate				U	133	ug/L					
QC1203249518 365553008 PS											
Bromide	1.25	U	0.00		1.33	mg/L		106	(90%-110%)		01/22/15 18:56
Chloride	5.00		2.70		7.97	mg/L		106	(90%-110%)		
Fluoride	2.50	B	0.175		2.65	mg/L		99	(90%-110%)		
Nitrate-N	2.50		0.760		3.35	mg/L		104	(90%-110%)		
Nitrite-N	2.50	U	0.00		2.53	mg/L		101	(90%-110%)		
Phosphorus in phosphate	1.25	U	0.0522		1.27	mg/L		97.6	(90%-110%)		
Sulfate	10.0		14.0		25.4	mg/L		114*	(90%-110%)		
Oil & Grease Analysis											
Batch 1456239											
QC1203260831 LCS											
Oil and Grease	40.0				36.8	mg/L		92	(77%-107%)	JXT1	02/09/15 07:53
QC1203260830 MB											
Oil and Grease				U	1.40	mg/L					02/09/15 07:53
QC1203261023 365553014 MS											
Oil and Grease	37.9	U	1.34		30.4	mg/L		78.2	(68%-105%)		02/09/15 07:53
Titration and Ion Analysis											
Batch 1453934											
QC1203254252 365484001 DUP											
Alkalinity, Total as CaCO3			102000		99600	ug/L	1.93		(0%-20%)	PXO1	01/31/15 19:52
QC1203254247 LCS											
Alkalinity, Total as CaCO3	50000				48100	ug/L		96.2	(90%-110%)		01/31/15 19:16
QC1203254245 MB											
Alkalinity, Total as CaCO3				U	725	ug/L					01/31/15 19:16
QC1203254254 365484001 MS											
Alkalinity, Total as CaCO3	50000		102000		148000	ug/L		92.3	(80%-120%)		01/31/15 19:54

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QC Summary

Workorder: 365553

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Titration and Ion Analysis										
Batch 1454936										
QC1203257033 365929002 DUP										
Alkalinity, Total as CaCO3		75800		75800	ug/L	0.00		(0%-20%)	PXO1	02/04/15 11:30
QC1203257031 LCS										
Alkalinity, Total as CaCO3	50000			47600	ug/L		95.3	(90%-110%)		02/04/15 10:39
QC1203257029 MB										
Alkalinity, Total as CaCO3			U	725	ug/L					02/04/15 10:39
QC1203257035 365929002 MS										
Alkalinity, Total as CaCO3	100000	75800		168000	ug/L		92.3	(80%-120%)		02/04/15 11:31

Notes:

The Qualifiers in this report are defined as follows:

- < Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
- > Result greater than quantifiable range or greater than upper limit of the analysis range
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- N Spike Sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1376462
Revision No.: 2

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
27-JAN-15	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
IC	SW846 9056A	Liquid	CPRC
Batch ID:	**Sample Numbers:**		
1452140	See Below		

Potentially affected work order(s)(SDG): 365553(GEL365553)

Application Issues:

Sample Analyzed out of Holding

Specification and Requirements Exception Description:	DER Disposition:
1. Sample Analyzed out of Holding: 365553 005, 007	1. Sample was initially analyzed within holding; however, the holding time had expired prior to reanalysis of diluted sample.

Originator's Name:

Rachael Bell 27-JAN-15

Data Validator/Group Leader:

Thomas Lewis 18-FEB-15

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1381065
Revision No.: 2

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
11-FEB-15	Industrial		Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
BALANCE	1664A/1664B	Liquid	CPRC
Batch ID:	**Sample Numbers:**		
1456239	365553009, 365553010, 365553011, 365553012, 365553013, 365553014, 365553015, 365553016		

Potentially affected work order(s)(SDG): 365553(GEL365553)

Application Issues:

Sample improperly preserved

Specification and Requirements Exception Description:	DER Disposition:
1. Sample improperly preserved 365553009, 365553010, 365553011, 365553012, 365553013, 365553014, 365553015, 365553016	1. Samples were not preserved to a pH <2. The pH was adjusted by the analyst prior to analysis and the Project Manager was notified.

Originator's Name:

John Thomas 11-FEB-15

Data Validator/Group Leader:

Elzbieta Szulc 11-FEB-15